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Thinking big

Tokyo Century's Mahoko Hara outlines the synergies from the ACG takeover

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REGIONAL AIRCRAFT FOCUS

Coronavirus added to list of unknowns

As if aviation did not have enough potential problems on the horizon along comes another virus, writes **Oliver Clark**.

As Covid-19, or coronavirus as it is known, continues its seemingly inexorable progress to becoming a pandemic, the aviation industry has clung to the hope that the outbreak will follow the pattern set by SARS in 2003.

This approach was crystallised by International Air Transport Association (IATA) in February when it gave an initial assessment of the possible impact of the virus based on a "V-shaped" scenario that SARS followed 17 years earlier.

In that outbreak, the spread of SARS led to a steep drop in Chinese domestic capacity as measured by revenue passenger kilometres (RPKs) over the first three months, followed by an equally quick recovery within six to seven months.

A similar, if less severe, pattern was observed in Asia-Pacific airline RPKs, while other viral events such as Middle East respiratory syndrome (Mers flu) in 2015 led to a shallow dip over a similar timeframe.

IATA says that such an assumed Covid-19 "SARS-shaped" scenario would imply a 4.7% loss to industry-wide RPKs in 2020 and a $29 billion loss of passenger revenues.

But IATA outlines several caveats in its assessment. For one, its appraisal of the impact on revenues and RPKs includes regional impacts outside Asia-Pacific that are based only on the direct exposure to Chinese markets.

"No additional or second-round weakness of Asia-Pacific markets are included. SARS had wider impacts, but so far Covid-19 has 99% of its cases in mainland China," states the airline association.

This assessment, though, was made before major outbreaks were identified in South Korea, Italy and reportedly in Iran.

IATA admits that the economic landscape has changed a lot since 2003.

China's economy is much greater now than it was then. Since SARS, China and other Asia-Pacific airlines' share in worldwide RPKs have risen from 27% to 35%, while China's domestic market has become twice as important for total Asia-Pacific airlines' RPKs, growing from 12% of the total in 2003 to 28% in 2019.

It notes that January passenger data from China indicates a "sharper decline" than during the first month of the SARS outbreak.

Then there is the question of whether Chinese carriers in particular can absorb the losses predicted.

The Chinese government's reported intention to acquire HNA Group points to the likelihood of consolidation and nationalisation to stave off bankruptcies.

The decision by some carriers such as Xiamen Airlines and Shenzhen Airlines to issue so-called "virus bonds" – consisting of billions of renminbi in short-term commercial paper – points to a fairly desperate need for cash.

Then there is the roll call of carriers suspending routes to China, grounding aircraft and issuing trading updates warning of the virus's financial impact on their operations.

Global markets have been even less sanguine with some of the biggest stock sell-offs witnessed in recent years. Aviation-related companies have been particularly badly hit, with Easyjet's stock price down 20% since 21 February. Lessors have suffered, with the share prices of both Fly Leasing and Air Lease Corporation (ALC) each down about 13% since 20 February.

Inevitably, the problems facing the airlines have become the lessor's problems too. ALC and DAE Capital are among those to disclose that they have received requests from airlines for a partial or full rent holiday, of several months.

There have also been approaches from airlines for what can be assumed to be very attractive sale and leaseback deals. Some lessors have reacted positively to these requests, arguably they could do little else. But rent relief is only a temporary solution and will only be effective if the impact of the virus lessens in a similar pattern to SARS.

IATA's approach of assessing the likely path of coronavirus against previous virus outbreaks is logical, but it gives little succour to the aviation sector, which must list coronavirus with the other "unknowns" it is already labouring under.

These include the question mark over whether Boeing's prediction that the 737 Max will be recertified by mid-year will come to pass? Will US-China trade tensions ease? Is capacity balanced with supply? How will climate change and government reaction to it, impact on aviation?

But the leasing community is nothing if not well versed in managing market flux. This was reflected at *Airfinance Journal*'s Dublin 2020 conference in January where the general consensus was that the coming year would be marked by significant challenges.

Beyond the Max grounding, a record number of airline failures in 2019 is expected to continue into 2020 to put pressure on lessors this year, although aircraft are being placed rapidly.

Attendees also observed that pricing had bottomed out, driven by still-high volumes of liquidity.

Last year saw a return to high issuances of asset-backed securities financings, and remains an interesting option for investors.

The perennial talking point of lessor consolidation popped up again. Tokyo Century completed its acquisition of Aviation Capital Group last year, while Marubeni will complete the purchase of Aircastle this year. Japanese firms are expected to continue their push for leasing companies.

That said, leasing is now a lower-margin business, with the Dublin panellists predicting that reduced margins would persist this year and next. However, the market is in better shape than a year ago, when it was stressed by a terrible December for the equity market.

The growing importance of environmental, social and governance criteria was a key talking point at the conference and this has filtered through in the form of the first green aviation financing for Avation and the first green bonds issued by ICBC Leasing in 2019.

OLIVER CLARK
Editor, *Airfinance Journal*
oliver.clark@airfinancejournal.com

Editor
Oliver Clark
+44 (0)207 779 8597
oliver.clark@airfinancejournal.com

Asia finance editor
Dominic Lalk
+852 2842 6941
dominic.lalk@airfinancejournal.com

Greater China reporter
管沁雨 (GUAN Qinyu); Elsie Guan
+852 2842 6918
elsie.guan@airfinancejournal.com

Consulting editor
Geoff Hearn

Managing director
Laura Mueller
+44 (0)207 779 8278
laura.mueller@airfinancejournal.com

Managing editor
Olivier Bonnassies
+44 (0)207 779 8062
olivier.bonnassies@airfinancejournal.com

Group sub editor
Peter Styles Wilson

Managing director, The Airline Analyst
Mike Duff
+44 (0)207 779 8058
mduff@theairlineanalyst.com

Advertisement manager
Chris Gardner
+44 (0)207 779 8231
chris.gardner@euromoneyplc.com

Head of sales
George Wiliams
+44 (0)207 779 8274
george.wiliams@airfinancejournal.com

Head of Asia subscriptions
Harry Sakhrani
+65 6422 1482
hsakhrani@theairlineanalyst.com

Senior marketing manager
Andrew Rolland
+44 (0)207 779 8364
andrew.rolland@euromoneyplc.com

Divisional CEO
Jeffrey Davis

Production editor
Tim Huxford

Subscriptions / Conferences Hotline
+44 (0)207 779 8999 / +1 212 224 3570
hotline@euromoneyplc.com

Customer Services
+44 (0)207 779 8610.
8 Bouverie Street, London, EC4Y 8AX

Board of Directors: Leslie van de Walle (chairman), Andrew Rashbass (CEO), Tristan Hillgarth, Jan Babiak, Imogen Joss, Lorna Tilbian, Colin Day and Wendy Pallot.

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ATR reshuffles customer finance department

Turboprop manufacturer ATR has appointed Guillaume Huertas as head of leasing, asset management and freighters after the departure of Karine Guenan to Airbus.

Huertas was head of sales Asia over the past three years. He has been with ATR since September 2004, mainly in the sales department.

Guenan joined Airbus in January as head of transaction review and guarantees. She left ATR after almost 18 years of service.

She had been vice-president leasing asset management and freighters since July 2018, when the customer finance structure was moved back under the chief financial officer directorate. Before this, she was vice-president customer and structured finance for seven years. Guenan joined ATR in May 2002 as sales finance director.

In late December, the then head of asset management and freighters, Philippe Archaud, left ATR after two years in the position. He joined the Airbus sales department in China to oversee leasing markets.

ATR tells *Airfinance Journal* that Nicola Checcacci has taken over Guenan's customer and structured finance role. He joined ATR in April 2019 from Embraer where he was director customer finance Europe, the Middle East and Africa since June 2016. Before that, Checcacci was the head of sales financing at Superjet International.


Guillaume Huertas

Bryan Cave Leighton Paisner adds to aviation finance team

Former Clifford Chance lawyer Anton Chambers has joined Bryan Cave Leighton Paisner (BCLP) as a partner in its transportation and asset finance division.

Chambers, who will be based in the firm's London office, is described as an experienced aviation finance lawyer who advises financial institutions, arrangers, owners, lessors, operators, insurers and original equipment manufacturers in the full range of asset financing techniques. He will focus largely on servicing clients throughout Europe, the Middle East and Africa.

Adam Dann, BCLP's London departmental managing partner for finance, says: "We are keen to continue to build out our international aviation offering and Anton's broad-based experience across the aviation sector working on a high volume of financing transactions, including new financings, refinancing and restructuring of existing deals mainly for banks, will be a great addition to the team."

SMBC AC loses head of trading

Michael Weiss is leaving SMBC Aviation Capital (SMBC AC) after nearly six years with the operating lessor.

SMBC AC confirms Weiss is departing to "take some time out to spend with his family". He joined the company in 2014 and has led the aircraft trading team, which has sold more than 190 owned aircraft for more than $6 billion.

"He leaves the team in a strong position, well capable of continuing to deliver for the business," says an SMBC AC spokesperson.

Weiss will work with the SMBC aviation team until the end of March "to ensure an orderly handover of his work".

In January, SMBC AC closed a $600 million syndicated financing, comprising a $200 million term loan and a $400 million revolving credit facility, with a consortium of Asian-Pacific and European banks. Australia and New Zealand Banking Group acted as the global coordinator, while six banks – Australia and New Zealand Banking, CaixaBank, Bank of China Macau Branch, Cathay United Bank, E.Sun Commercial Bank Tokyo Branch and First Commercial Bank, Offshore Banking Branch – acted as mandated lead arrangers and bookrunners on the five-year facilities.

Former **Aercap** CFO advises Chinese lessor

Keith Helming has returned to the aircraft leasing industry with a senior advising role for Chinese lessor Bocomm Leasing. He left Aercap in May 2017 after 10 years as the lessor's chief financial officer (CFO).

Aercap named Peter Juhas as its CFO in December 2016. Juhas was previously head of global strategic planning at American International Group.

MUFG head of aviation steps down

David Goring-Thomas, MUFG's global head of aviation, will leave the bank in April, *Airfinance Journal* can reveal.

The former head of aviation at DVB Bank led the integration of the German bank's aviation lending business into MUFG last year and was confirmed as MUFG's global head of its aviation finance business last November.

When contacted by *Airfinance Journal*, MUFG stated: "We can confirm David will be stepping down as global head of aviation finance."

The bank mentioned no reasons for his departure, but *Airfinance Journal* understands that he will remain until the spring to continue supporting the integration of DVB's aviation lending business.

Last November, MUFG finalised part of its acquisition of DVB's aviation finance division, taking over the latter's €4 billion ($3.8 billion) lending portfolio.

The acquisition of DVB's aviation investment management and asset management businesses, which will be transferred to a newly established subsidiary of BOT Lease in the UK, where those businesses will be held, will be finalised this year.

Sources expect the second closing to be at the end of the first quarter of 2020.

Before joining DVB Bank in 1998, Goring-Thomas worked at the Long-Term Credit Bank of Japan, the Swiss Bank Corporation and NatWest Bank.

Chief funding officer to leave **NAC**

Steve Gorman

Nordic Aviation Capital's (NAC) chief funding officer, Steve Gorman, is to leave the operating lessor after almost five years, sources confirm to *Airfinance Journal*. He joined NAC in April 2016 via the acquisition of Aldus Aviation.

Gorman founded Aldus Aviation in 2008 and was its chief executive officer (CEO) at the time of the acquisition.

He played a leading role in NAC's launch of its unsecured funding programme and was named chief funding officer in March 2018.

NAC raised $858 million in the US private market in February, a transaction that was the largest private placement issuance by an aircraft lessor.

Citigroup, Credit Agricole and Goldman Sachs arranged the record-breaking US private placement for NAC - which has a BBB rating for senior unsecured debt from Kroll Bond Rating Agency - with three, five and seven-year tranches. The initial target size was $250 million but that grew to $858 million on the strength of demand. Final spreads were 235 basis points (bps), 245 bps and 250 bps over US Treasuries, respectively.

The transaction has a weighted coupon of 3.92%. There are over 26 investors involved in the transaction; eight of which represent new investor relationships.

In March 2019, NAC sold a $786.3 million US private placement with Citi, Deutsche Bank, Goldman Sachs and RBC Capital Markets.

On 10 February, NAC appointed former ATR chief executive officer Patrick de Castelbajac as its new CEO.

De Castelbajac will take up his new role in the third quarter of 2020 and will be based in the Danish lessor's newly opened Limerick, Ireland, headquarters.

He replaces Soren Overgaard, who has been CEO since 2015 having previously been chief financial officer.

Winstead bolsters air finance practice

Law firm Winstead has announced the additions of Jaeyong (Jae) So and Jaesuk (Jay) Yoo as shareholders in the firm's airline finance practice, based in its newly opened New York office.

The firm expects So and Yoo to "bolster Winstead's preeminent airline practice, which represents some of the largest airlines in the world".

Winstead's chairman and chief executive officer, David Dawson, says: "The firm is committed to strategic growth responsive to client demands, and the addition of the New York office is certainly in line with that strategy."

He adds: "Jae and Jay are the perfect attorneys to anchor Winstead's presence in New York and to expand our airline practice."

The New York office is the firm's eighth in the USA.

So and Yoo have extensive experience advising airlines on financing and fleet matters, including leases, mortgage financings, export credit agency financings and capital markets transactions (such as enhanced equipment trust certificates and notes offers).

Breeze hires former Allegiant executive as CFO

US start-up Breeze Airways has hired several former Allegiant executives for key roles as it prepares to launch operations later this year.

Former Allegiant Air finance executive Trent Porter has been appointed as the carrier's chief financial officer. He previously spent 10 years at Nevada-based Allegiant in various posts, most recently as senior vice-president finance.

Lukas Johnson, the former Allegiant senior vice-president of commercial, has been appointed Breeze's chief commercial officer.

US media reports that Breeze Airways, formerly called Moxy Airways, is planning to apply to US authorities for an air operator's certificate and other licences ahead of launching flights in late 2020.

In 2019, the start-up finalised an order for 60 Airbus A220-300s, and earlier this year Breeze, which was launched by David Neeleman, whose previous airline ventures include Jetblue Airways and Azul Lineas Aereas, signed a letter of intent to sub-lease up to 28 Embraer E195s from Azul.

White Oak hires former Aergen executives

White Oak Global Advisors has hired a trio of former Aergen Aviation Finance executives to bolster its aviation finance team.

Bob Genise, Asa Watts, and Greg Byrnes will join White Oak Aviation, an aviation financing affiliate created to expand the firm's offerings to the aviation market. They will be based in Bellevue, Washington and Ireland.

Genise is a former chief executive officer (CEO) of DAE Capital. He was a co-founder of Boullioun Aviation Services and served as president and CEO between 1995 and 2005.

He was also a co-founder and former CEO of Aergen, an aircraft leasing and engine parts management company which sold the bulk of its portfolio to Apollo Aviation, now Carlyle Aviation Partners, in February 2019.

Watts was formerly director of pricing, asset and lease management at Aergen, while Byrnes was chief financial officer.

Genise, Watts, and Byrnes will work closely with White Oak's existing commercial aviation finance professionals to help meet the "growing need for bespoke aviation financing products".

Bob Genise

Asa Watts

What comes after LIBOR?

With the London interbank offered rate being phased out, what will replace it and how can airline financiers and lessors prepare for the change? **Richard Sharman**, partner at Bird & Bird, discusses its impact on aviation with *Airfinance Journal*.

The London interbank offered rate (LIBOR), a key interest rate benchmarking mechanism used in the global financial markets for decades, looks set to be discontinued in 2021 after a number of scandals and questions about its effectiveness.

Efforts have been underway to find alternatives to LIBOR that are "risk free" or, in other words, based on actual recorded transactions instead of quotes from panel banks. For sterling, the market is moving to the sterling overnight index average (SONIA). For US dollars, the current approved replacement is secured overnight financing rate (SOFR). These alternatives are not direct replacements and this gives rise to a number of complex commercial and operational issues that have not yet been solved. But at the same time, the regulators are pressuring banks to stop writing new deals based on LIBOR.

In a separate, but parallel process, the European Union is replacing its own euro overnight index average (EONIA), with ESTER, which is based on daily market transactions, rather than quotes from banks, by the end of 2021.

What will the end of LIBOR mean for aircraft financiers and lessors? In an interview with *Airfinance Journal*, Richard Sharman, partner at Bird & Bird, points out that if financiers use floating-rate dollar debt funding, like many market participants, then they need to find a new way of pricing the benchmark rate in their deals.

"For existing secured aviation deals, the difficulty is twofold: first you need to agree the new benchmark, which is no easy task as the alternatives are not direct replacements, so there are some commercial points to be won and lost that will affect pricing; second, as well as amending the loan you will need to diligence whether the local law security needs to be retaken on the basis you have fundamentally altered the nature of the secured obligations."

Can the air finance and leasing sector prepare itself for this change?

Sharman agrees It is difficult, as market participants will be wary of trying to group together to agree a position due to breaching competition rules. "The market needs brave participants to take the initiative and say what their house view is and if enough people do this then a market position will emerge."

He says: "The LMA [Loan Market Association] has prepared exposure drafts using compounded SOFR but they cannot take the documents much further without the emergence of a market position. It will be interesting to see the outcome of the consultation on these drafts."

Sharman says many people see LIBOR transition as a technical legal problem for the lawyers but there are some big commercial points. Others are waiting for forward-looking term rates but these may not materialise in time or at all. And the UK regulator has said this isn't the solution and market participants need to stop writing LIBOR deals now. He thinks it's an opportunity for lessors and airlines and a risk for the banks.

"For borrowers, it's an opportunity to execute a land grab and have an impact on reshaping the loan market in their favour for years to come. For example, if there's no adjustment spread the new benchmark is likely to be lower than LIBOR; and it's arguable concepts like break costs and market disruption (based on a lender's cost of funds exceeding the benchmark) should fall away. Conversely, the banks are likely to want to preserve the status quo economically as well as find the easier solution operationally for their back office."

LIBOR replacement

Talking about dollar LIBOR – dollars being most relevant currency to aviation finance – the current approved replacement ARR [alternative reference rate] is SOFR, which is an overnight dollar rate says Sharman. "But it will not be a straight swap with LIBOR because LIBOR looks forward one or three months typically whereas SOFR is an overnight rate. The market needs to agree how to compound SOFR so it can work as a forward-looking rate. It is possible that a term SOFR is created in the future but this may not happen so the market should not wait around."

He says LIBOR may not just be replaced with compounded SOFR. "As LIBOR prices in term and counterparty risk, whereas SOFR is an (almost) risk-free rate, SOFR will be a lower rate so a question for the market currently is, does there need to be an additional credit spread added on top of SOFR to account for this value transfer? This is linked to the high-level fundamental question whether in a world of new benchmarks we keep the working assumption that the benchmark is reflective of a lender's cost of funds? Or is the new rate just an agreed benchmark that is not reflective of actual costs of funds?"


Richard Sharman

Impact on lessors

Sharman says, some lessors will have a very limited exposure if their unsecured corporate funding is not linked to LIBOR and they have mainly fixed-rate operating leases in their portfolio. Their problem may be limited to amending a default interest clause that is linked to LIBOR.

Lessors who rely on floating-rate funding and/or have floating-rate leases in their portfolio will need to address the problem. "From the bank's point of view, they need to think about contract certainty if they are writing new deals now based on LIBOR with only a basic "agreement to agree" rider clause for replacing the rate.

They may need to think about putting risk warnings on term sheets for new deals being based on LIBOR. It is not inconceivable that there is some litigation risk for the banks if six months into a 10-year deal they ask the borrower to fundamentally rewrite the economics of the benchmark."

The return of **US Ex-Im**

The US export credit agency is back after years in stasis, but how large a part will it play in a today's aviation financing market? **Oliver Clark** reports.

After years in the political wilderness, the Export-Import Bank of the United States (US Ex-Im) found an unlikely saviour last year in President Donald Trump.

Under his administration, the bank's quorum of board of directors was restored in May – returning its ability to authorise transactions greater than $10 million. At the end of the year, the export credit agency (ECA) secured a seven-year reauthorisation – the longest in the bank's 86-year history.

The return of the bank has been met with enthusiasm by airlines. In January, Gol's chief financial officer, Richard Lark, told *Airfinance Journal* the carrier plans to finance a portion of its future 737 Max with US Ex-Im guarantees.

So how much of a slice of the present market will the bank take?

"It is too early to say," a source tells *Airfinance Journal*. "They have historically been – unfairly – criticised for being 'the Bank of Boeing' and will be wary about being perceived in that way again. But ultimately, they are the export agency of the USA and if exporters need them they should be there."

He adds: "Because the commercial market is so liquid at the moment, the ECAs are supporting fairly low levels of new aircraft deliveries. If and when the market turns, that will be the true test of the extent to which Ex-Im will step in to correct any market failure," he adds.

"The Ex-Im Bank is a critical component in the aviation finance eco-system," says Dan da Silva, Boeing Capital's (BCC) vice-president of strategic regulatory policy.

"The absence of Ex-Im occurred during a time – fortunately for all of us – when the availability of commercial aviation finance was very positive, very plentiful and the effects of the absence of Ex-Im Bank were muted but were not non-existent."

US Ex-Im guarantees are critical for what da Silva calls "corner conditions", to provide support where the commercial markets "are not efficient or don't like to play".

These include "challenging markets" where the private sector has trouble dealing with a high-risk environment – whether political or economic high risk – where most financing requires a sovereign guarantee or government guarantee which is not easily offered to the private sector.

Then there are "very good" airlines that operate domestically in markets without dollar-denominated revenue and niche aircraft types which require support to gain market acceptance.

Other candidates include "challenging credits" such as start-up airlines which the private sector is not very efficient at financing, or restructuring or restructured airlines and new market entrants.

BCC's current aircraft finance outlook 2019 report shows that Ex-Im support for Boeing deliveries peaked in 2012 at 30% amid the financial crisis before falling off to 11% by 2015 and dwindling to nothing by 2017.

BCC does not forecast how much of its future deliveries the bank is expected to guarantee. Boeing's da Silva says the bank averaged 7% participation in the years it was active in the market, peaking at $18 billion in 2012.

"Ex-Im's function in the marketplace is to fill gaps in export financing where the private sector is unable or unwilling to provide support," a spokesperson for the bank tells *Airfinance Journal*, adding: "We anticipate that Ex-Im's financing will be available to support Boeing's aircraft deliveries as warranted."

But a lot has changed in the years since US Ex-Im was last active. When the bank first became dormant in 2015 the market began looking for alternatives to fill the void.

One answer has been to bring in the insurance market as guarantor, a trend that is most evident in the development of Aircraft Finance Insurance Consortium (AFIC), a collaboration between Marsh and a panel of global insurance providers to guarantee Boeing aircraft.

"I believe that Ex-Im will play a diminished role going forward," says Vedder Price's Ronald Scheinberg.

> *"The absence of Ex-Im occurred during a time when the availability of commercial aviation finance was very positive, and plentiful."*
>
> **Dan da Silva**, vice-president of strategic regulatory policy, Boeing Capital

> *"Ex-Im will certainly be an important financing standby for a market turndown or, God forbid, catastrophic event – like 9-11."*
>
> **Ronald Scheinberg,** Vedder Price

"Given the requirement to price the risks in line with market factors, Ex-Im will no longer be able to offer consistently the cheapest financing. However, they will still be an important option for those credits that are more difficult to finance and perhaps deals of a particularly large size," he adds.

BCC's da Silva praises the increasing involvement of insurance companies through AFIC and other products and the support that the US original equipment manufacturer receives from ECAs in the UK and Italy, but says "they are not sufficient to cover the entire gap".

It is likely the US Ex-Im will only come into its own when the next global shock sucks liquidity out of the financing market.

"Ex-Im will certainly be an important financing standby for a market turndown or, God forbid, catastrophic event – like 9-11 – and, in such eventuality, its product usage will likely explode. In the meantime, it will be just one of many available financing options available to purchasers of Boeing aircraft," says Scheinberg.

BCC's da Silva says medical epidemics should not be overlooked as a threat to market stability, recalling that during the SARS epidemic there was "a lot of uncertainly" and an uptick in ECA support. Could the same happen in the case of coronavirus?

"We will have to observe and see what happens with this current situation with the coronavirus, whether it goes there or not," he says. "If I had to take a guess, I don't think it will be the same response. The market is a lot more stable today than it was in the SARS days."

In a state of **flux**

Last year was not an easy time for Chinese low-cost carriers (LCCs), with the biggest transformation involving several HNA-affiliated LCCs. The future of those airlines remains unclear, reports **Elsie Guan.**

China's low-cost carriers (LCCs) are different from their western counterparts. Unlike airlines such as Ryanair, Easyjet and Southwest Airlines, Chinese budget carriers have not been that successful and, as a result, did not grow the way many western LCCs did.

One of the main reasons for this is tight regulation and few airports that offer rebates to LCCs. Also, Chinese LCCs face intense competition from China's high-density, widely distributed and punctual high-speed railway (HSR) network. HSR stations are usually located near city centres, unlike airports, which are in rural areas, making it easier and quicker for travellers to reach them.

The first LCC to take to the skies in China was Spring Airlines. The Shanghai-based carrier now operates 95 Airbus A320-family aircraft in its fleet, including A320s and A320neos. Forty-three aircraft are under ownership, while 51 are on operating leases and only one is on finance lease contract.

9 Air – a Guangzhou-based affiliate of Shanghai-based Juneyao Airlines – operated a fleet of 20 Boeing 737-family aircraft (including one 737 Max 8) as of 31 January. One aircraft is owned, two are on finance leases and 17 are on operating leases.

Operating a single type of fleet could reduce aircraft purchase or lease costs, a lessor source tells *Airfinance Journal*. "When buying or leasing an aircraft, no company will only want to have one aircraft. A carrier can usually achieve more discounts if it introduces several aircraft of the same type at one time," says the source.

Airfinance Journal's Fleet Tracker shows that Spring's aircraft are leased from several lessors, including GECAS, Avolon, BOC Aviation, Macquarie Airfinance, ICBC Leasing, DAE Capital, China Aircraft Leasing, CMB Leasing and ABC Leasing. 9 Air's aircraft are leased from GECAS, Avolon, CMB Leasing and Bocomm Leasing.

When introducing new aircraft to their fleet both Spring and 9 Air prefer aircraft acquisitions and/or operating leases to finance leases.

Operating leases is a more flexible product and allow a reasonable fleet structure, asset structure and debt ratio compared with aircraft purchases.

"Through operating leases, Spring Airlines can mitigate cash-flow pressure and decrease asset risk," says Spring spokesman Wuan Zhang, who adds that an operating leases allow airlines to introduce aircraft quicker during an expansion phase.

However, for fleet size and fleet-planning purposes, an airline usually needs to purchase a certain number of aircraft. The biggest difference between purchasing aircraft and finance lease exists in financing structure, says Zhang. He adds that Spring almost stopped introducing aircraft under finance leases from external lessors after it established its affiliated leasing company.

Juneyao Group has also established an affiliated leasing platform to handle lease transactions for Juneyao Airlines and 9 Air. Harvest International Finance Lease, which it founded in 2014 and registered at the Shanghai Free Trade Zone, is a sino-foreign joint venture controlled by Juneyao Airlines.

Airfinance Journal's Fleet Tracker shows that five 737-800s in 9 Air's fleet are leased from Harvest International Finance Lease. A Juneyao Airlines source says that Harvest International Finance Lease covers both finance lease and operating lease businesses, and serves Juneyao and 9 Air primarily.

As two typical LCCs in China, privately-owned Spring and 9 Air both adopt single-fleet and operating lease-preferable strategies, enabling them lower operational risks with cash-flow backup.

China's LCCs can be divided into three categories. The first group includes airlines that have stuck with the LCC business plan they were initially set up with. Spring, which was created by a private travel agency, and 9 Air, the LCC arm of Juneyao Airlines, are examples of this type of operation.

The second category involves budget carriers that have transitioned from the full-service carrier to the LCC model,

such as China United Airlines and Jiangxi Air. China United is a subsidiary of China Eastern Airlines, while Jiangxi is a division of Xiamen Airlines, which is, in turn, a subsidiary of China Southern Airlines.

The third group includes HNA Group-affiliated LCCs, all of which are/were subsidiaries of the Chinese conglomerate, which includes Capital Airlines, Guangxi Beibu Gulf (GX) Airlines, West Air, Urumqi Airlines, Air Changan and Fuzhou Airlines.

The number of HNA-affiliated LCCs accounts for about 50% of China's low-cost market, according to data from Ctrip, a Chinese travel services provider. However, over a 12-month period to December 2019, some HNA Group LCCs were sold to their local governments, bringing about uncertainties as for their future.

Capital Airlines

On 25 June 2019, Hainan Airlines announced that the HNA Group and Beijing Tourism completed due diligence for the acquisition of Capital Airlines, facilitating the restructuring of the former HNA carrier.

State-owned Beijing Tourism signed an agreement with HNA Group in December 2018, aiming to make it a majority shareholder of Capital.

GX Airlines

On 12 June 2019, Hainan Airlines said that the Guangxi government would become the majority shareholder of HNA Group-affiliated GX Airlines.

After the transaction, GX Investment Group holds 71.2% of the airline's shares. Hainan kept 24%, while GX Airport Group owns the remaining 4.8%. GX Investment Group and GX Airport Group are both wholly-owned subsidiaries of the Guangxi state-owned asset supervision and administration commission.

Urumqi Airlines

Hainan Airlines, the majority shareholder of Urumqi Airlines, said in November 2019 it was to sell a 40% share of the company to the Urumqi government, bringing the airline under the provincial authority's control.

Urumqi City Construction Investment (UCCI), a subsidiary of the Urumqi state-owned assets supervision and administration commission, already owns 30% of Urumqi Airlines and, after the stake sale, UCCI will own 70% of the carrier, with Hainan retaining a 30% share.

West Air

In December 2019, Hainan Airlines said that West Air will introduce Chongqing Yufu as its majority shareholder, with the wholly-owned subsidiary of the state-owned assets supervision and administration commission of Chongqing owning no less than 70% after the restructure.

HNA's disposal of shares in its subsidiaries is viewed as a way of easing its current debts, but also fits into the group's "asset-light" strategy.

In the future, HNA may rely on its own aviation management experience to retain the operations of its subsidiaries, seeking for a new way to cooperate with government-controlled carriers through providing management for its former airlines.

The sales of HNA-affiliated LCCs also reflect difficulties faced by China's privately-owned carriers. Initial funding to enter the aviation industry is increasing.

New airlines also need to factor in the acquisition of aircraft or leasing costs, which along with bank financing costs, are relatively high for privately-owned carriers.

"We shouldn't think of the Chinese market as being defined as a low-cost market or a full-service market. Everyone is competing on the same routes. Large airline groups benefit from strong networks. They are efficient operators and their network is competitive," Andrew Herdman, general director of the Association of Asia Pacific Airlines tells *Airfinance Journal*.

"We find that across Asia, there are full-service carriers and low-cost carriers competing between the same city-peers. Consumers just have a choice and decide what kind of product they want to use. There is only one market – it's the consumer who decides what they are going to buy," he says.

The major Chinese carriers benefit from very strong networks, so there are few opportunities for LCCs, especially small LCCs, to be successful, says Herdman.

He also emphasises the country's infrastructure as a barrier of entry for new players. "Because many airports in China are congested, this makes it more difficult for new entrants to open up new routes. Spring Airlines stands out because it has been successful and tries to differentiate itself from others," says Herdman.

"If you expand internationally and you get into longer routes, medium- and long-haul routes, the point-to-point model is not that effective because not so many routes can support simple point to point. So LCCs find that they need to team up well or form a partnership with other LCCs and to manage revenue network," he adds.

> *We shouldn't think of the Chinese market as being defined as a low-cost market or a full-service market. Everyone is competing on the same routes.*
>
> **Andrew Herdman**, general director, Association of Asia Pacific Airlines

Fleets of some HNA-affiliated LCCs

Carrier	Fleet
Capital Airlines	86 aircraft (six A320neos, three A330s, one Bombardier CRJ200 and 76 A320-family aircraft)
GX Airlines	18 aircraft (nine Embraer E190s, four A320neos and five A320s)
Urumqi Airlines	17 aircraft (16 737s and one E190)
West Air	35 aircraft (six A320neos and 29 A320-family aircraft)

Source: *Airfinance Journal* Fleet Tracker, January 2020

Investing in mid-life **widebody aircraft**

Altavair AirFinance's joint fund with US investment firm KKR has initially targeted widebody aircraft, but all sectors of the market will be considered.

The purchase of 38 used widebody aircraft is not a common transaction, especially in the context of a relatively soft market for the Airbus A330 and Boeing 777 models. Still, Altavair AirFinance has reasons to think that its joint investment with KKR makes sense.

The $1 billion acquisition will be made through aircraft leasing investment platform Altitude Aircraft Leasing, which was established by KKR's credit and infrastructure funds in 2018 to acquire aircraft serviced by Altavair.

The fund, which was launched last year, has a four- to five-year investment horizon. The fund's lifetime is more than 12 years.

At the time, Altavair AirFinance's chief executive officer, Steve Rimmer, told *Airfinance Journal*, the lessor would not be afraid of looking across a group of aircraft.

Availability in the widebody market is plentiful but Rimmer says the fund could not find value in commodity narrowbody aircraft portfolio sales and therefore looked at other widebodies, where it saw value in an appropriately structured and priced widebody deal.

"Our core team strengths, which include widebody and freight markets, are where we believe the risk-return is more appropriately balanced," says Rimmer.

He argues that not many companies are prepared to provide a fleet solution to Etihad Airways and the mandate allows the fund to differentiate itself from the "commodity" market.

The Etihad deal includes 22 A330s and 16 777-300ERs. There are two key components in the transaction: the 777 fleet will be sold and leased back to Etihad, giving revenues to the fund for between four and 10 years. The A330s will not be sale and leaseback deals and will be divested over a period of 22 months.

Altavair AirFinance has experience in the 777-300ER market. It acquired five aircraft under sale and leaseback transactions in 2013, of which two came from Etihad.

The lessor also has two 777-200LRs on lease to Emirates Airline and another six 777-200LRs leased to Qatar Airways. Its exposure to the cargo market is limited to two 777F aircraft with Korean Air, as well as two 747-400ERFs with ASL Airlines and another two with Atlas Air.

"Our core team strengths, which include widebody and freight markets, are where we believe the risk-return is more appropriately balanced."

Steve Rimmer, chief executive officer, Altavair AirFinance

Etihad's 777-300ER fleet includes five aircraft aged 15 and 14 years, while one aircraft was built in 2009. However, the remaining nine aircraft were delivered new to Etihad between 2011 and 2014. By the time they leave the UAE-based carrier's fleet, those nine units could be converted into freighter or be candidates for another lease.

The older models, however, are prime candidates for cargo conversion.

Last autumn, IAI and GECAS launched the 777-300ERSF-conversion programme with a 15-aircraft firm order and options on an additional 15.

Airfinance Journal understands that the supplemental type certificate (STC) development programme has been launched and the prototype conversion is estimated to take over three years (to enter service in the fourth quarter of 2022) to achieve FAA STC approval, while subsequent aircraft will average four to five months to convert.

The GECAS aircraft are expected to be sourced from its own portfolio, but the 777-300ERSF could see lots of interest, especially from leasing companies which have passenger aircraft in their portfolio.

The A330s may be more challenging because of the current market conditions.

The A330 fleet includes 16 A330-200s and six A330-300s. The first aircraft should be redelivered this quarter. The final A330 is expected to leave Etihad in December 2021.

Altavair AirFinance says the A330s could be placed on lease for either passenger operations or as converted freighters. Those are two different markets, and the passenger market remains soft.

At January's *Airfinance Journal* Dublin 2020 conference, the consensus was that A330 lease rates had gone down another notch since last autumn, maybe as a result of the bankruptcies of Thomas Cook Airlines, XL Airways and Aigle Azur.

Air Lease recently placed a 2009-vintage aircraft with National Airlines. The lessor said it had received "multiple" bids for the aircraft, which enabled it to secure "market comparable" lease rates.

One source estimates lease rates for relatively new A330-300 deliveries at about $550,000 a month but the second-hand market is more impacted.

Some transactions featuring mid-life aircraft have closed at about $240,000-a-month leases, but there has been a placement as low as $215,000 a month for eight-year terms. The market may be above this number, though.

Leasing sources are more of the opinion that $250,000 a month for a mid-life aircraft is the real market value.

A leasing source says that lease rates for mid-life A330-300s are typically between $250,000 and $300,000, depending on age, condition and configuration.

Olga Razzhivina, senior ISTAT appraiser at Oriel, says the rates are depressed.

"The one saving grace for the A330-300 not in the sense of leasing but considering its future, is the fact that it makes a much better freighter in conversion," she says.

This may be the route for some of the Altitude Aircraft Leasing aircraft.

The six A330-300s were delivered new to Etihad between June 2009 and August 2011. The A330-200 portfolio is more diverse. Two are 2005-vintage aircraft, five were built in 2006 while another four were delivered in 2007. One aircraft was delivered in 2008 and another one in 2009. The rest are 2013- and 2014-vintage units.

The -200s are seen as ideal for the express package freighter market.

Capacity is available in the short term at German passenger-to-freighter conversion firm Elbe Flugzeugwerke (EFW), the joint venture between ST Engineering Aerospace and Airbus. EFW delivered its final A330-200P2F to Egyptair Cargo at end of last year and its current orderbook for A330 conversions stands at five A330-300s for DHL Express, with options for 10 more.

Egyptair Cargo could convert up to four additional A330s currently operating in its passenger fleet. The facility can convert about five aircraft a year but has capacity to convert more units.

The A330-200s will compete with the 767-300ER in the conversion market, but Rimmer says that the Etihad fleet ranges from 2005 to 2014, which is significantly different from the mid-1990's 767-300ER models. The 767 fleet is older and has less-efficient engines.

"Let's also not dismiss environmental and reliability aspects," he adds.

Rimmer recognises that taking 22 A330s over a 22-month period is a challenge but also an opportunity. "Most people are dealing with book values that are based on legacy prices and we have pricing which reflects the current market. Where else do you go and get 22 sistership aircraft? It is almost like having your own speculative OEM [original equipment manufacturer] order backlog."

The real restriction on the A330-200 in freighter configuration has been the price of feedstock and then addressing operating costs. The fund will probably be in a good position to address those challenges: a 22-sistership group of aircraft with the same specifications should be seen as a huge benefit, especially given that there are fewer 767s available (and limited sisterships).

Rimmer argues that the A330-200 passenger model can still be a compelling aircraft in terms of economics at the right lease rates, especially in the absence of the new mid-market aircraft (NMA) product.

The A330-200 model could also benefit, in certain cases, from the additional cost of the tariffs imposed to US carriers on A321 and A330neo models.

He observes that airlines are tired with the challenges, costs and service reliability of new-technology aircraft, and the A330 offers a known and reliable product.

Relatively cheaply priced A330s and all with the same configuration so that the conversion cost would be standard could draw strong interest in the express package market.

"If you can offer A330-200s at similar lease rates to a 767-300ER and also address maintenance costs, including engines, with innovative coverage at an attractive cost you can be very competitive," he says.

In a larger context, Rimmer sees airline alliances fragmenting and this could have consequences on widebody fleets. "As airline alliances falter and break up, a range-capable twin widebody becomes more attractive to a wider group of airlines, and to address the suddenness of airline alliance fragmentation, a used widebody at an attractive cost makes sense."

The fund's next move will probably be for narrowbody assets because it will look to balance investments across both the narrowbody and widebody categories.

"I think we'll be in the single-aisle space, which is a space where we've had challenges meeting the pricing objectives of sellers or airlines or leasing companies.

"We'll be careful about that in the sectors where we haven't played extensively – which are very few sectors – but we have been in and out of sectors as the markets change. We recognise that going forward with this capital, we need to be consistently in all sectors of the market."

Niche lessor adds first widebodies

CIAF Leasing plans to issue Egypt's first corporate sukuk as it expands from narrowbodies to A330 widebodies. **Dominic Lalk** speaks to its chairman, Hassan Mohamed.

In late 2019, Egypt's CIAF Leasing added the first widebodies to its aircraft portfolio after the acquisition of three late-life Rolls-Royce Trent 772B-60-powered Airbus A330-200s from UAE lessor DAE Capital that were manufactured in 2000 and 2001.

The aircraft were originally ordered by Emirates Airline and later acquired by DAE Capital, which was leasing them to Egyptian carrier Air Leisure until that carrier's demise in October 2018. Air Leisure was primarily operating the A330s on charter services bringing Chinese tourists to Egypt.

CIAF Leasing has not placed the A330s with a permanent operator and instead operates the aircraft on ACMI services using its own air operator's certificate, which it was granted by the Egyptian authorities in June 2019. As such, the A330 assets have been operating ad-hoc missions for CIAF since they were brought in. This included a February roundtrip between Cairo and Wuhan, which served to repatriate Egyptians stranded in China after the coronavirus outbreak.

CIAF is on a growth trajectory. At the 2019 Dubai air show, the lessor ordered its first new aircraft, committing to three Embraer E190s for delivery next August and September.

"We have been focusing on mid-life aircraft, that is our business plan, but now we look forward to adding brand-new aircraft," CIAF chairman and chief executive officer, Hassan Mohamed, tells *Airfinance Journal*. He adds that the Embraer orders will support the lessor's activities in Africa and the Middle East.

"We're one of the big players in this very specific region in terms of small narrowbody aircraft, seating between 70 and 110 passengers," says Mohamed.

Asked about potential placements for the new E190s, Mohamed says: "We have started negotiations with some operators. We provide both dry and wetleases and we're talking to small operators in Africa and the Middle East – charter carriers and scheduled ones."

He says CIAF has a competitive advantage with smaller operators in Africa and the Middle East. "Actually, the big lessors are not willing to support these people, but we are talking to a lot of small players and new entrants about what we can do to support them."

"My shareholders are also willing to make additional capital injections because our financial statements these last few years were very strong. Our return on investment is fantastic, especially last year when we achieved almost 15% returns."

Hassan Mohamed, chairman and chief executive officer, CIAF Leasing

The leasing company also added its first E195s to its portfolio in late 2019 after purchasing the 2008-vintage units from GECAS. This comes after the acquisition of three E170s from Egyptair earlier that year.

CIAF Leasing is state-controlled. Egypt's Ministry of Civil Aviation is the firm's major stakeholder. As such, the lessor is very well connected with the country's movers and shakers, including its financiers.

Mohamed says CIAF will finance the Embraer order largely through Egyptian banks, including the National Bank of Egypt. He emphasises the significance of this, because the bank has not previously been involved in aircraft financing. "CIAF has many financing options for these aircraft but most noteworthy is our relationship with the National Bank of Egypt. In 2019, we did some financing deals with them and that was the first time those guys financed aircraft," explains Mohamed.

It will not stop there. The lessor has been confirmed as Egypt's very first issuer of corporate sukuk. The $50 million issuance was expected to close in February but there has been a slight delay to March.

"CIAF will be the first company in Egypt to issue sukuk. This is an advantage for us and we expect a good financing for sukuk," he says. Abu Dhabi Islamic Bank will be the lead manager for the $50 million transaction. To compare, much-larger DAE Capital said in February it was considering tapping the sukuk market for the first time this year too, although its offering would likely exceed $500 million.

In the interim, CIAF continues to explore other financing avenues, particularly in Africa.

"We're actively engaging a number of international and Ex-Im banks, especially African Ex-Im banks. We have outstanding relationships with many African Ex-Im and African development banks. That's another advantage for us and there's a lot of financing options there," says Mohamed.

"My shareholders are also willing to make additional capital injections because our financial statements these last few years were very strong. Our return on investment is fantastic, especially last year when we achieved almost 15% returns," he says.

CIAF's current portfolio comprises three E170s, two E195s, four Boeing 737NGs, an A320 and three A330-200 widebodies. Its orderbook comprises the three E190s due directly from Embraer later this year.

CIAF has its sights on portfolio growth and aircraft trading.

"We're a solutions provider. For some of the larger players with existing fleets we can take out their mid-life E1 units and replace them with new ones," says Mohamed.

The lessor's current portfolio has lease agreements with Air Cairo, AMC Aviation, China Eastern Airlines, Jasmin Airways and TUI Fly. Quizzed on why CIAF chose to order the E190 rather than E2 aircraft, he grins.

"We are focused on being a great follow-up but not launch customer. We prefer to wait one or two years, then we will choose the E2," he says.

RMB sets sights on Europe

After years with a primary focus on its home African continent, Rand Merchant Bank is positioning for greater involvement in Europe, reports **Oliver Clark**.

The return of Rand Merchant Bank (RMB) to the European market got off with a bang in 2019 with its involvement in the financing of two Virgin Atlantic Airbus A350 deliveries.

In August, the bank participated in one Virgin Atlantic's finance lease transaction with an insurance guarantee supported by Aviation Capital Group (ACG). The South African bank provided a junior secured loan for a portion of the aircraft purchase price, with Apple Bank for Savings providing the insured senior loan to finance.

RMB participated in another Virgin Atlantic A350 finance lease deal in September, this time providing another junior loan while Bank of China was the senior lender.

Wouter du Preez, RMB's senior aviation finance transactor, tells *Airfinance Journal* that these deals are just the start of a greater focus on the European space after a number of years when the Johannesburg-based bank had turned its attention to African financing opportunities.

"In our future strategy, we want to build some scale and scope in Europe," he says.

Du Preez says RMB has decided to focus on mostly junior loan and mezzanine financing opportunities in Europe.

The closing of these two A350-1000 finance leases to Virgin Atlantic represented: "Clear evidence to the market that RMB had appetite for junior loans alongside senior lenders of choice, including providing critical tenor stretch to 12 years in a market where the norm still remains five-to-seven years mostly for junior loan products," he says.

RMB has quite a "wide focus" mandate, including widebodies, narrowbodies, regional aircraft and freighters, although Du Preez says the bank remains "very picky" about the type of assets it invests in.

RMB was very focused on new-generation widebodies in 2019, primarily the A350, A330neo and Boeing 787-9 models.

"These represent environmentally clean technology and, despite many efforts around new product development, will remain the mainstay for future long-haul fleets of most quality operators.

"We also like the A321LR model specifically as they have attracted a formidable orderbook and due to their ability to now offer carriers such as TAP Air Portugal access to the America's from Europe with a narrowbody. We also like the ATR products with STOL [short takeoff and landing] features as well as the E175/E195s from Embraer," explains Du Preez.

RMB takes a three-pronged approach when it comes to evaluating a potential deal – credit risk, asset risk and legal risk – and Du Preez says the bank has found it needs to weigh in on all three, otherwise it is "overly reliant on just one, such as asset risk, then you can miss some obvious shortfalls in the other".

He adds: "We don't bank a deal when the asset risk is deemed really low with low LTV [loan to value], but the credit risk is just too high [too much airline leverage or lack of cash in their business]. A valuable strategy has been to align ourselves in specific deals alongside aviation banks and leasing companies that are asset-risk experts – these bring a myriad of experience on aircraft values, maintenance status assessment, etc."

Importantly, RMB's mandate spans the whole capital structure from pre-delivery payment, senior, junior loans all the way to full first loss equity.

The bank's offerings span both fully amortising and bullet structures and are structured in some instances as quasi-debt and in some other as quasi-equity.

This focus is primarily driven by RMB's costs in US dollars and euros being "higher than typical aviation funders" and, hence, the natural attrition to subordinated tranches "where pricing is better, albeit against aircraft we are comfortable with a LTV and default perspective".

What allows RMB to compete in the market is its small size, innovative approach and more focused participation while being "more nimble and more efficient" and to chase opportunities that would not necessarily appeal to larger banks.

RMB's ticket size for deals average about $25 million to $50 million, although it can go higher when required.

The bank can also provide smaller funding transactions, down to about an $8 million junior loan on a single transaction, for example.

While RMB is focused on junior and mezzanine debt, it would be open to providing senior debt where competitive on pricing.

"I think there are entities at the moment that are very aggressively, very efficiently pricing the bulk of senior debt, especially on new aircraft. A lot of that has been going to Jolcos [Japanese operating lease with call options] which is very efficient. Frankly we don't have the ability to compete with the big majors on such senior debt pricing because of their access to US dollar/euro liquidity compared to ours," says Du Preez.

"In our future strategy, we want to build some scale and scope in Europe."

Wouter du Preez, senior aviation finance transactor, Rand Merchant Bank

The new focus on Europe is in fact a return to a market in which RMB participated as part of a pre-2008 global mandate for the bank.

While the collapse of Lehman Brothers and the subsequent financial crisis left parent company FirstRand largely unaffected, a decision was made that RMB should focus on the African continent, a market in which it already had wide experience and expertise.

This led to deals across both debt, as funder, and equity, as an active operating lessor to Ethiopian Airlines, Kenya Airways, Air Namibia and others.

"In 2018, this Africa-only mandate was expanded to Europe, with very strong support from RMB and FirstRand to rebalance the risk inherent in what was an Africa-only book. Europe now represents around 90% of our pipeline and we expect this to continue due to simplistically just more deal volume being available to execute on," he says.

Nevertheless, Du Preez is clear that European financing does not come without its risks.

"Europe remains a challenging region at the moment," he says. "There have been a lot of airline failures of late, but from a deal-flow perspective, we have seen a lot of activity and we don't struggle to originate just because we are a smaller player."

Deflected Gol overcomes Max delay

Brazil's Gol is ready to explore a wide range of financing options to fund its Boeing 737 Max orders once the grounding of the type is lifted, but meanwhile the carrier has moved on, reports **Oliver Clark**.

Like so many airlines that relied on the Boeing 737 Max for their fleet-renewal plans, Brazil's Gol had to find some serious workarounds last year to mitigate the impact of the grounding of the type.

In an interview with *Airfinance Journal*, Gol's chief financial officer, Richard Lark, says the low-cost carrier deferred the sale of 11 737NGs to provide additional capacity to support its operations in 2019.

Those aircraft were subsequently sold to Carlyle Aviation Partners in early February 2020 and leased back to the airline until they are replaced by the Max.

In addition, the Brazilian carrier incorporated another 18 737NGs in its fleet in 2019 on short-term leases, not only to deal with the Max grounding, but also to alleviate the pickle fork issues that affected a portion of Gol's NG fleet.

While much of Gol's exposure to these problems comes from its model of operating a single aircraft type, this also worked to its advantage in other ways, because the low-cost carrier was able to find efficiencies and increase utilisation of its 737NG fleet to an average of 13 hours a day.

Lark says this had been so successful that Gol had been able to increase available seat-kilometres by 6% in 2019 and, partly through higher aircraft utilisation, had even managed to "beat" its revenue targets.

While the Max grounding affected Gol's immediate schedule in 2019, it has also had the effect of freezing the Brazilian carrier's biggest fleet-renewal exercise since 2006 when it began taking delivery of 80 NGs.

Gol has 129 Max aircraft on order, consisting of 99 Max 8s and 30 Max 10s, and this time around the airline is looking to take a much larger share of these through finance leases than it did its NGs.

"In the first cycle [in 2006] we did 50-50 finance and operating leases. In this next cycle, we would like to go up to as much as 60% finance lease, but it really reflects an ownership mentality," he says.

"Gol is 60% owned by a family with a long history in this business – part of the reason for that is if you need to adjust capacity down it's easier to do it with operating leases, but we have had very good experience over the last couple of years of monetising the NGs," he adds. Lark says that in its 2006 cycle of deliveries, Gol worked with commercial banks supported by the Export-Import Bank of the United States (Ex-Im) on its finance leases.

With Ex-Im now reauthorised, Lark expects it to help finance a "portion" of Gol's future Max deliveries. But as the carrier is a "much larger credit" now than in 2006, it is looking at widening its pool of financing structures as part of a policy of having a "diversified liability portfolio".

"The market today is much larger. It includes other private sources of funds that don't involve US government guarantee. I think within that portfolio of finance leases the US Ex-Im Bank will have a smaller piece," he says.

The airline will seek to tap the Japanese operating lease with call option (Jolco) market and is exploring sources such as insurance-backed products – for example, AFIC and AFS.

Lark says Gol has no immediate plans for an enhanced equipment trust certificates transaction. "Part of the reason is the loan-to-value on those is low so therefore it has a higher cost for us. But I think at some point over the next couple of years we will evaluate that (option)."

A "large chunk" of the deliveries will also come via sale and leasebacks. Lark points out that Gol has existing relationships with 22 lessors and these proved a huge help when the airline was seeking additional capacity last year to fill gaps in the absence of the Max.

Future deliveries

Before the grounding of the type in March 2019, Gol had taken delivery of seven Max aircraft, while another seven were stored in Seattle.

At the end of the third quarter, Gol's total fleet consisted of 125 737s, comprised of 118 NGs and seven Max aircraft.

Lark says the Brazilian carrier plans to take delivery of 69 Max aircraft between 2020 and 2024. Between 23 and 24 are expected by the end of this year and a further 10 in 2021, 12 in 2022 and 12 in 2023.

He adds that Gol is working to the assumption it will have "visibility" by April on the expected return to service of the Max, which will give it a clearer idea of whether it needs to source short-term capacity for the high season.

"Right around April, if we don't have visibility on that we then have to go out and source additional aircraft for the high season. July, December and January are the big seasonal months in Brazil," he says.

As things stand, Gol plans to redeliver 17 leased 737NGs, including short-term subleases, in 2020.

Lark says Gol has not experienced any reluctance on the part of financiers or lessors to engage with them on future Max financing, but he does say the airline experienced some "push back" on the financing of pre-delivery payments (PDPs). Gol prefers to use debt to finance its PDPs via short-term facilities.

"Today, very few lenders will lend against that [PDPs] because their collateral in that, if the airline doesn't pay, they will take over your order and resell the aircraft. But, at the same time, it has reduced the amount of lenders that are providing PDP financings – the PDPs have gone away because there are no aircraft being delivered," he says.

Lark adds that when sourcing NGs in 2019, it took two former Jet Airways aircraft under operating leases. As part of that agreement with the lessor, Gol has also taken over a "couple" of Max aircraft from the Jet Airways' orderbook "but in a SLB [sale and leaseback] format".

Gol's financing strategy will see it going from 9% of its fleet being financed leased against 91% under operating leases in 2019, to 44% financed leased and 56% operating leased by 2025.

"The market today is much larger. It includes other private sources of funds that don't involve US government guarantee."

Richard Lark, chief financial officer, Gol

It works to a financing plan of matching US dollar assets against US dollar liabilities and according to him the airline is "building up free equity on 60% of its 130 Max order".

The airline's financing plans come amid a strengthening of its balance sheet and improved operating metrics.

Gol's financial leverage, as measured by its debt-to-earnings before interest, tax, depreciation and amortisation (Ebitda) ratio was about 2.7x at the end of December 2019, down from 5.7x in 2016.

The airline expects to amortise about R$100 million ($23.1 million) of debt in the fourth quarter, and total liquidity at quarter-end is expected to be at R$4.3 billion, from R$4 billion in the previous quarter.

Lark says the airline has no "relevant" debt maturities in the next five years, until R1.7 billion of exchangeable notes come due in 2024 and R3.4 billion of US-denominated debt matures from 2025.

The airline achieved an Ebit profit of R692 million in the third quarter, R451 million higher than in the same quarter in 2018. It is expected to reach R858 million in the fourth quarter.

The sale of 11 NGs in February generated a R$130 million reduction in finance lease debt and a R$370 million increase in cash liquidity. Subsequently, the airline plans to use a portion of these proceeds to call the outstanding amount of its 8.875% senior notes due in 2022.

Outlook

When asked about the economic potential of Brazil, Lark recalls a popular joke about the country's prospects. "It's the country of the future and always will be," he quips. But Lark does see a great deal of latent potential for growth in the South American country as it recovers from the 2015/16 recession and the pro-business policies of President Jair Bolsonaro's administration begin to take effect.

Lark says the current administration is currently undertaking a lot of structural reforms.

"The best way to think about that and what they are going for – the team there – is a higher quality GDP growth.

"So while we are seeing perhaps lower GDP growth than we might want – we would love to see something in the order of 4% to 5% a year – there has been a big focus on the quality of that GDP growth think about investment and production rather than government and consumption," he says.

Lark adds that tax reforms, through the elimination of a "large part of bureaucracy" to create a "platform for growth" was part of this, but another element of government policy has been pushing through the privatisation of Brazil's airports.

He expects this to help "promote more investment in infrastructure and competition between airports".

Inflation and interest rates fell from the eye-watering highs of 10.7% and 14% respectively in 2015 to 4% and 4.5% in 2019. GDP growth is slowly recovering from falling into negative territory in 2015.

According to data from Brazil's civil aviation authority, Gol is the largest domestic carrier in the country, with a 39% share, ahead of LATAM (37.7%) and Azul (23.3%). A major event in the market in 2019 was the collapse of Avianca Brasil in June.

However, Gol faces strong challengers because Azul grew its share by 24% in the year and LATAM by 21.7%, while Gol grew by just 1.8%. Some of this is likely the result of the Max grounding, with Azul and LATAM predominantly operating Airbus aircraft.

Lark expects the return of the Max will allow Gol to grow its network, especially in international markets, where the aircraft offers economics savings and higher capacity than the NGs, and allow the airline to continue its strategy of rapid growth.

ACG deal ends M&A activity – for now

Aviation Capital Group will remain a "teenager enterprise" holding assets worth $15 billion to $18 billion after the Tokyo Century buyout, its chairwoman and Tokyo Century president of specialty finance Mahoko Hara tells **Dominic Lalk**.

Tokyo Century ended 2019 with a bang: in December, the Japanese powerhouse completed its acquisition of US operating lessor Aviation Capital Group (ACG), buying the remaining 75.5% interest for about $3 billion. This represented a premium of about 10% on top of ACG's book value.

The deal, first announced in September, means that Tokyo Century now owns 100% of California-based ACG. The writing had been on the wall after Tokyo Century acquired a 20% membership interest in ACG in 2017 and later expanded its ownership to 24.5%.

With its acquisition of the remaining interest in ACG, Tokyo Century plans to improve its aviation business value chain through collaboration among its aviation financing businesses, which are driven by Japanese operating lease (Jol) products, and aircraft aftermarket-related businesses that leverage expertise in used aircraft and parts.

As such, Tokyo Century continues to hold a 49.2% shareholding in Florida-based GA Telesis (GAT) and, in 2019, it set up an engine leasing joint venture along with All Nippon Airways Trading and GAT.

Mitsubishi UFJ, Morgan Stanley Securities and Mizuho Securities acted as financial advisers for the ACG buyout, and on its completion Moody's assigned issuer and senior unsecured debt ratings of Baa2 to ACG, saying this reflected the lessors's long history of profitable operations, high-quality fleet composition, diverse funding sources and effective liquidity management.

Seasoned aviation finance veteran Mahoko Hara was and remains a leading figure in the ACG takeover. She tells *Airfinance Journal* in an exclusive interview that the ACG integration will take a year to 18 months to complete. Being both the managing executive officer of Tokyo Century and the executive chairwoman of ACG, Hara is in a unique position to guide and oversee the two powerhouses' continued future success.

The Tokyo native, who was appointed executive chairwomen of ACG in December after the acquisition, tells *Airfinance Journal* what the transaction means for Tokyo Century.

"With the ACG acquisition we have now built a very strong full-service platform, especially for operating leases. Our operating lease business going forward will be centralised with ACG. But apart from ACG, we of course also have our other investments and support business in the aviation supply chain, including GAT in which we own a 49% holding. As you know, GAT focuses on mid- to end-of-life aircraft and so this strikes a good balance with ACG, which focuses on newer aircraft. We also have a dedicated Jol and Jolco [Japanese operating lease with call option] related business here in Tokyo. This way we are able to cover the full spectrum, the full life cycle of aircraft, so this gives us a very good value proposition and it allows us to create synergies going forward," says Hara.

"For example, we can now make joint bids for large portfolios of aircraft of different ages. This gives us a very strong competitive advantage. Also, we can now work with ACG on structuring JoI and Jolco transactions so that will allow us to strengthen our capabilities in the Japanese market even more so than before," adds Hara.

Many of the movers and shakers in aviation finance have been wondering how Tokyo Century financed the hefty $3 billion deal.

"The acquisition is currently financed through large bridge loans provided by Japanese financial institutions and some cash on hand, but we are looking to refinance that in several months," says Hara.

"It will be refinanced with a combination of hybrid financings and we will probably also utilise loans from government-backed financial institutions as there are certain facilities for overseas investments by Japanese companies that are quite attractive. Also, we'll use some permanent loans from banks. So essentially, the ACG acquisition is funded through a combination of those three," she discloses.

Asked about the specifics of the hybrid financing, Hara explains that these are financial instruments "structured to provide equity credit from credit rating agencies, essentially subordinated bonds with very long terms of 35 years or with no maturity".

Over the past several years, Japanese corporations have looked increasingly overseas for investments because there are few such opportunities in domestic Japan. Tokyo Century's takeover of ACG set the stage for another massive deal toward the end of 2019: Marubeni and Mizuho Leasing agreeing to acquire US lessor Aircastle for about $7.4 billion including debt obligations.

In that transaction, shareholders will receive $32 in cash for each common share of Aircastle, excluding those shares already owned by Marubeni and its affiliates, representing a total valuation of about $2.4 billion. Furthermore, the Japanese investors will also take on $5 billion in debt obligations to be assumed or refinanced net of cash.

In 2013, Marubeni took an initial 28.8% stake in Aircastle.

Some industry players have predicted intense competition would ensue between Tokyo Century/ACG on the one hand and Marubeni/Aircastle on the other but others have downplayed those concerns because Mizuho owns parts of Tokyo Century and Marubeni, as well as IBJ Leasing, which confirms Mizuho's ambition to be a major player in the aircraft leasing sector.

Tokyo Century's appetite for more M&As, however, is diminished for the time being.

> *In the past, ACG has set themselves very ambitious targets, what they call becoming a 'teenager enterprise', meaning anything from say $15 to $18 billion in assets.*
>
> **Mahoko Hara**, chairwoman and president of specialty finance, Tokyo Century

"If there are good opportunities in the market we will definitely explore and consider them, but realistically the ACG integration and creating synergies there will keep us quite busy in the near term. Most of our energy and resources will be spent on that rather than going out there and seeking new M&A opportunities," says Hara.

"Luckily, we already know the people at ACG extremely well owing to our previous investment in the company and as such we hope the transition and integration process will happen quite fast. Having said that, it will probably take at least a year, maybe a year and a half to fully integrate the ACG and Tokyo Century platforms," she adds.

Hara does, however, think that the general trend of Japanese firms spending their M&A money overseas will continue in 2020.

"I believe this trend will continue, not just in the aviation field but also generally speaking as the growth and investment opportunities locally, in domestic Japan, continue to shrink. There really aren't many attractive opportunities domestically. So that trend will continue, although having said that, if you look at the aviation field, almost all of the major institutions that have the capabilities and interest to do aircraft financing have already seized their opportunities, and there really aren't any significant opportunities out there at this moment," she notes.

One of the big Japanese firms expected to make investments overseas in 2020 is flag carrier and fellow oneworld member Japan Airlines (JAL) Group which has risen from the ashes of its spectacular 2010 bankruptcy and emerged stronger and more profitable than ever before in its 68-year history.

"JAL was prohibited from making investments for a very long time as they were under rehabilitation protection and restructured. But with the good results and the capacity that they now have I believe they are interested in making overseas investments and I think there's a good chance that they will," says Hara.

In November, JAL increased its stake in low-cost carrier Jetstar Japan to 50% from 33.3%, having acquired the additional shares from Mitsubishi, which is no longer a shareholder. Now, apart from JAL, the other shareholders of Jetstar Japan are Qantas Airways (33.3%) and none other than Tokyo Century (16.7%).

"We've seen ANA invest in aviation training provider CAE as well as hotels and resorts. JAL may also be looking at investments in peripheral support business," says Hara. JAL has also expressed an interest in acquiring a 25% interest in Malaysian flag carrier and oneworld member Malaysia Airlines.

After the ACG acquisition, Tokyo Century grew its portfolio to about 360 from about 40 aircraft. The Japanese corporation also inherited ACG's original equipment manufacturer (OEM) orderbooks, which will add another 140-plus Airbus and Boeing aircraft in the coming years.

Hara says that ACG will continue to focus on new and mid-life narrowbody aircraft going forward but she would not want to narrow down what an "ideal future fleet size" may look like.

"ACG does have a strong orderbook which is not just Maxs but a good combination of other narrowbody aircraft as well. We don't have a target number of aircraft or an ideal fleet size but we're still looking to grow, although more moderately than in the past given the headwinds in the market," she explains.

"In the past, ACG has set themselves very ambitious targets, what they call becoming a 'teenager enterprise', meaning anything from say $15 to $18 billion in assets. So that's still the target but having said that, with the very difficult market situation that we're facing currently with the Max issue and the coronavirus, we need to be very mindful and conservative about how we grow.

"Going forward, the growth trajectory will be somewhat more moderate compared to what has been expressed in the past," adds Hara.

Naturally, Tokyo Century's and ACG's strengthened position in the market begs the question of how this might influence their negotiating and bargaining power with the OEMs going forward.

"Being a predominantly narrowbody lessor we really only have two options, don't we?" Hara laughs, adding that "one of them is not attractive at this moment because it's not flying".

As to greater leverage with the OEMs and other industry stakeholders, she says: "I'm not sure if we should say we gained more negotiating power because quite frankly we have had very good relationships with our financiers before the ACG acquisition. But there are of course benefits that have come through because of the ACG deal. For example, US financial institutions are showing more interest in us now and Japanese institutions are now having more interest in ACG. This will allow us to better access the different markets.

"So that's on the financial side. On the supply chain or OEM side – the hard metal stuff – the new combination of Tokyo Century, ACG and GAT hopefully will give us more power to negotiate better deals. This is what we would like to see going forward," says Hara.

Tokyo Century is a firm believer in the Airbus A320neo family and Hara commended the long and thin evolution the programme has enabled. The programme's irrefutable success, she believes, might have killed Boeing's still-under-consideration New Midsize Airplane (NMA).

"With all the A321neo variations that Airbus is coming up with I think the single-aisle segment is well served, enabling more routes and longer missions that may have been served historically by widebodies. This may continue but I'm also a believer in good competition, so if Boeing does indeed decide to launch the NMA we would definitely be looking at it. I am not too sure if they will do but they may have missed the opportune timing. If, however, the Airbus [delivery] delays continue or get even worse than I think, they might have another shot."

"I don't think the Airbus delay situation will improve in the next year or two. Everyone is doing what they can but unfortunately that still doesn't mean that the situation will change in the near term. That's, of course, a concern for us but naturally it's an even bigger concern for the airlines as it wreaks havoc with their schedules and passenger experiences. It also affects the bottom line. Meeting targets will be difficult if you don't have an aircraft at the time it was scheduled to enter the fleet," she says.

ACG has placed orders for 100 737 Max variants. Of those, seven had been delivered before the global grounding order took effect in March 2019. Hara says that, despite the significant disruption this has caused, Tokyo Century and ACG remain committed to that order.

"Our customers still want to get their Maxs and be able to actually fly them. With the current situation everyone is forced to look at their options. But again, there's only two options so what it really comes down to is what you can negotiate with Boeing now. I don't think they will come down on their pricing too much because that will be very detrimental for their future negotiations but they might offer compensation or services deals," says Hara.

"Seven have been delivered from our orderbook that are already with customers, this was before the grounding. Since then we've had a couple that have been completed but are now sitting in the Boeing parking lot," she adds.

> *"It's very likely that we will see more airlines cease to operate in 2020. It has already begun. Here in Asia I guess it very much depends on how soon this virus outbreak can be contained."*
>
> **Mahoko Hara**, chairwoman and president of specialty finance, Tokyo Century

ACG and Tokyo Century will continue to have their focus on narrowbody aircraft, although they are also open to adding more A350s and 787s to the portfolio. The 777 programme, however, is not on their radar.

"We will stick with those assets that have the most liquidity and the most liquidity is in single-aisle aircraft. We need to be very careful in the widebody segment and yes, you are right, especially A330 values have been looking very badly recently. Thankfully, we only have very little exposure. ACG has three older A330-200s that are being transferred from Thomas Cook to Air Transat but that's about it," says Hara.

ACG has a single A350 but Hara says "there's more A350s to come and they will be predominantly SLBs [sale and leasebacks]".

She says: "We will keep the portfolio predominantly narrowbody going forward. We will still be looking at certain widebodies, the 787 and the A350, but the 777 programme isn't something we're very interested in given the current and projected future market and that includes the 777X. It's not an asset on our radar."

Boeing has received orders for 309 777Xs to date, although these are heavily skewed geographically with Middle Eastern airlines accounting for 200 of the orders.

Since the outbreak of coronavirus across Asia, several airline investment and procurement chiefs have told *Airfinance Journal* that they are seeking to close more sale and leaseback (SLB) transactions this year so as to curb their expenditure. Hara agrees that this would be a sensible course of action to take despite a cutthroat sale and leaseback market in recent years that has seen yields fall dramatically.

"Will SLB demand be going up in the current environment? That's a good question isn't it? I can very much see airlines wanting to reduce their capital expenditure and preserve cash in the current environment so that's quite likely. It's a simple way to get some cash in hand," says Hara.

"There's still a lot of new money coming into the market and money that needs to be spent is still there, so initially I think SLB RFPs [request for proposals] will be quickly snatched up. Over time, we expect that there will be a market correction in terms of SLB pricing. Maybe that's wishful thinking on our part but one can hope," she says.

The aviation finance industry has observed the influx of significant capital from Chinese state-owned and private companies over the past five years. Initially, everyone wanted a piece of the pie but, over the past 24 months, a number of those new players have started retreating, especially Chinese firms.

"I believe that we will see more players retreat from the market after they realise how tough and competitive it really is," says Hara. In the same vein, she believes that further liquidation and consolidation in the airline and leasing sectors in 2020 are becoming unavoidable, particularly as coronavirus continues to spread across Asia.

"It's very likely that we will see more airlines cease to operate in 2020. It has already begun. Here in Asia I guess it very much depends on how soon this virus outbreak can be contained. We're already seeing massive capacity cuts and lots of empty seats and that's only going to expand and the situation for the airlines will get worse before it gets better," says Hara.

In the first two months of 2020, three airlines stopped flying: Ernest Airlines, Qatar Airways-affiliated Air Italy and Turkey's Atlasglobal.

As *Airfinance Journal* went to press, there have been several reports in news outlets that the Chinese government is to liquidate HNA Group and its stable of airlines and merge them into state-owned Air China.

As this situation continues to evolve, Hara and her team can do little but sit and wait.

"We would not say that we are not concerned, but there's really not much we can do is there? We are closely monitoring the situation, especially now with the coronavirus situation. This could become very bad for HNA but it's difficult to predict accurately of course," she said.

ACG has 16 narrowbody aircraft exposure to HNA Group carriers.

Jolco all the way

Last year was a record-breaker for Japanese operating lease with call option (Jolco) financings. **Olivier Bonnassies** and **Dominic Lalk** examine the evolution of the Jolco in 2019 and ask what might happen in 2020.

In its 2019 Japanese operating lease with call option (Jolco) survey, *Airfinance Journal* counted 134 aircraft transactions that were financed or refinanced using the Japanese finance tool.

Narrowbodies continue to account for the bulk of Jolco deals, particularly the Airbus A320neo-family as Boeing's competing 737 Max series remains grounded until at least September or October 2020.

The Jolco equity market has kept its preference for narrowbodies. According to Thierry Pierson, managing director, Asset Brok'Air, narrowbodies are more popular because they provide a better tax incentive for the Jolco market. "Vintage aircraft continue to be an excellent asset for Jolco transactions," he adds.

The Max situation has put a number of Jolco mandates on hold, but BNP Paribas' Kenji Maeda says that some deals that closed in 2019 include transactions involving Max aircraft.

The past year has seen a number of notable developments in the Jol/Jolco space, including the proliferation of more Jolco deals with lessors as a natural adjustment to the shift in aircraft ownership from airlines to lessors; more refinancings of vintage aircraft; and more innovative debt structures emerging, combining the traditional Jolco with instruments including asset-backed securities (ABS), enhanced equipment trust certificates (EETCs) and Aircraft Finance Insurance Consortium (AFIC) debt.

"In 2019, we've seen the market expand, maybe even a bit too much because there was a moment where supply exceeded demand. This forced arrangers to sell down their inventories at a discount. We had hoped this would correct itself back but unfortunately this does not look to be the case for 2020," Tokyo Century joint general manager and global head of marketing, Marito Takamasa, tells *Airfinance Journal*.

"This year is still looking to be a very competitive market because there's a lot of demand there. This market has expanded greatly in the past few years," he adds.

Natixis' head of aviation finance for Asia-Pacific, Jean Chedeville, agrees.

"If you look at overall volumes, they've gone up over the years. In 2018/19, we've seen larger transactions requiring larger Japanese equity underwriting capabilities for both Jol and Jolco, including a couple of EETC-supported debt combined Jolcos and the ABS-supported debt combined Jols," he says.

"Thus, we're seeing that some of the Jolco underwriters becoming somewhat more open minded in terms of structure, jurisdiction, lessees and aircraft types when the economics are satisfactory," adds Chedeville.

Jolco innovation

In June 2019, Development Bank of Japan (DBJ) funded the world's first insurance-backed Jolco financing, applied to a Boeing 787-9 delivery for El Al. Under the deal, DBJ provided loans for the Israeli flag carrier to purchase the aircraft, while the bank was protected against credit default risk by El Al by the Japanese AFIC for the duration of the loan. SBI Leasing Service and ABL Aviation arranged the Jolco.

Marsh formally launched AFIC globally in June 2017. Sompo Japan Nipponkoa Insurance and Sompo International Japanese offers AFIC, in collaboration with Marsh.

"Through the creation of Japanese AFIC many Japanese financial institutions, especially regional banks, can reduce the lending risks associated with aircraft finance and get involved in this dynamic industry, and offer airline financing solutions with greater confidence," says Robert Morin, AFIC transaction and business development leader at Marsh.

In May 2019, the Japanese tapped the E-note market on aircraft ABS transactions for the first time, signalling a shift change. In that maiden transaction, K&L Gates advised JP Lease and Stratos on their JOL AIR 2019-1 aircraft lease ABS, which featured equity sourced in the Japanese operating lease market.

JP Lease sponsored the deal and underwrote the equity to sell to its diversified pool of Japanese corporate clients, while Stratos arranged the acquisition and novation of the aircraft, the debt bridge funding, warehouse loan and ABS issuance, and will service the portfolio to lease maturity.

Proceeds from the ABS issuance were used to acquire 13 narrowbody aircraft (63.4% by value) and two widebody aircraft (36.6% by value) from two separate sellers: GECAS and Standard Chartered, with leases attached to Air Canada, Scoot, Qatar Airways, Flydubai, Gulf Air, Air Asia, Malindo, Philippine Airlines, TACA, Brussels Airlines and Batik Air.

Meanwhile, in late July 2019, the industry saw the closing of the first Jolcos with debt insured under the Airbus Balthazar project. Societe Generale - CIB acted as arranger, facility agent and security trustee in the three A320neo transaction.

Top overall arrangers

Jolco transactions - 2019

Rank	Overall arrangers	N of a/c
1	MUFG	30
2	BNP Paribas	24
3	SMBC	23
4	Natixis	16
5	CA-CIB	15
6	Asset Brok'Air	10
6=	ABL Aviation	10
8	Nomura Babcock & Brown	8
9	ANZ	6
9=	SMFL	6
9=	Burnham Sterling & Company LLC	6
9=	National Australia Bank	6
13	Development Bank of Japan	5
14	DVB Bank	4
14=	Bank of America Merrill Lynch	4
14=	Sumitomo Mitsui Trust Bank	4
17	FPG	3
17=	ING Bank	3
19	SBI Leasing	2
19=	Societe Generale	2
	Other	9

*Sources: AFJ Jolco Survey and AFJ Deal Tracker
**Numbers are not additive as credit for some transactions is given to more than one party

ESR bottlenecks

Banks are prepared for the earnings stripping rules (ESR), a tax law change that will enter into full effect at the start of the new fiscal year (1 April 2020 to 31 March 2021).

"Jolco arrangers have to take the earnings stripping regulations effective from April 2020 because there will be no grandfathering and this rule will be applied for all Japanese companies," says a representative of CA-CIB.

"The restriction on using the Jolco debt from outside Japan (ie, treaty loan) was announced in December 2018 and this has had an impact not negligible in arranging the debt. Otherwise, to our observation as of today, there is nothing negative on the horizon as far as the Jolco tax regime is concerned," says Maeda.

"In the recent past, Jolco investors were mostly focusing on tier-one lessees but this has changed alongside the tightening of the tax equity economics," says Natixis's Chedeville. "The combination of large underwrites, tightening returns, change in regulation and market volatility, we have noticed bottlenecks in 2019. We are hopeful, partly due to the tax-oriented nature of the products, the new fiscal year starting on 1 April, 2020 under the revised tax regime [ESR] will still see a steady volume of Jolco deals if not as large as the recent years.

"On the debt side, a few active Jolco lenders that don't comply with the new ESR regime will see their competitiveness affected as equity underwriters will be less tempted to work with them to potentially preserve the economics of the Jolco," the banker notes, adding that under the new tax regime "a percentage of non-Japanese lenders will be authorised, but their precise impact on the overall economics of Japanese equity investors' return will be subject to detailed computation of their tax exposure using the seven-year loss carry forward principle".

Natixis believes that some underwriters may not want to go to such level of complexity and may favour working with lenders which can book their loans in Japan.

"The market is still trying to understand what the exact consequence of this new tax environment may be and under which criteria it is still feasible to invite a portion of treaty lenders into the transaction. Leasing houses are getting more relaxed on that topic," says Asset Brok'Air's Pierson.

"I think 2019 was a strong year for Jolco transactions and I'd expect your survey results to show that. I wouldn't say there was a spike in deals though."

Simon Collins, partner, White & Case

Top debt arrangers

Jolco transactions - 2019

Rank	Debt arrangers	N of a/c
1	MUFG	34
2	SMBC	23
3	BNP Paribas	20
4	Credit Industriel et Commercial	17
5	Natixis	16
6	CA-CIB	15
7	Korea Development Bank	14
8	Development Bank of Japan	12
9	La Banque Postale	11
10	ABL Aviation	10
10=	Banque Palatine	10
10=	BayernLB	10
13	Nomura Babcock & Brown	8
13=	E.SUN Bank	8
13=	KfW IPEX-Bank	8
16	ANZ	7
17	KEB Hana Bank	6
17=	SMFL	6
17=	NTT Finance	6
17=	Deka Bank	6
17=	Taishin International Bank	6
17=	Woori Bank	6
17=	MCB Islamic Bank	6
17=	National Australia Bank	6
	Other	49

*Sources: AFJ Jolco Survey and AFJ Deal Tracker
**Numbers are not additive as credit for some transactions is given to more than one party

Headwinds in 2020?

Pierson is expecting some headwinds for Jolco transactions in 2020 because of the cutthroat competition noted by Tokyo Century's Takamasa and the deteriorating business environment in Asia-Pacific amid the coronavirus outbreak.

Top equity arrangers

Jolco transactions - 2019

Rank	Equity arrangers	N of a/c
1	FPG	24
2	Nomura Babcock & Brown	16
3	JA Mitsui Leasing	13
4	NTT Finance	11
5	ABL Aviation	10
6	SBI Leasing	9
7	Asset Brok'Air	7
7=	Fuyo General Lease	7
7=	JP Lease	7
10	Tokyo Century Leasing	6
10=	Yamasa	6
10=	MUFG	6
10=	IBJ Leasing	6
14	BNP Paribas	4
14=	Bank of America Merrill Lynch	4
	Other	53

**Sources: AFJ Jolco Survey and AFJ Deal Tracker*
***Numbers are not additive as credit for some transactions is given to more than one party*

"Equity placement has suffered a lack of demand from TK (Tokumei Kumiai) investors in the current fiscal year due to the slowdown of the economy in Japan. Some of the leasing houses are affected by such a sudden change of environment as they have underwritten a large number of deals under different conditions. We do anticipate some difficulties towards the end of March 2020, as it is getting clear that all equity already underwritten will not be placed or placed at very bad conditions for leasing houses," says Pierson.

According to him, some equity transactions are extremely aggressive (low first-year loss and equity internal rate of return).

"We opted to not participate in those transactions to preserve and maintain our good equity placement track record, as well as our relationships within the leasing houses," he adds. "I think 2019 was a strong year for Jolco transactions and I'd expect your survey results to show that. I wouldn't say there was a spike in deals though. We're seeing more deals with multiple aircraft; we also saw more refinancing of vintage aircraft," Says White & Case partner Simon Collins.

Collins agrees with Asset Brok'Air's Pierson, however, that the current financial year may not produce as many Jolco deals as last year. "Absent from any global changes I would have said that 2020 would likely be another very strong Jolco year but now with the outbreak of the virus there's a lot more uncertainty. It's already had a big impact, at least on our schedule. A number of deals in the last few years have had a Chinese element and so those deals we had coming in at the beginning of this year are going rather slowly or have been put on hold entirely. I think people will find a way to work around it but it's hard to tell what the final impact will be," says Collins.

Last year generated many debt restructuring and origination Jol/Jolco transactions involving more Japanese-established banks.

In fiscal year 2020, several airlines went to restructuring and some of them entered Jolco transactions. "This generated additional concern for the leasing houses as they were obliged to restructure the transaction and for some to stop the equity placement," Pierson says.

For Pierson, the past three fiscal years have seen a peak in terms of equity underwriting and number of transactions closed in the Jol and Jolco markets. "We do anticipate a very conservative approach in fiscal year 2021. Equity conditions will revert back to normal levels," he says.

"Jolco equity appetite remains as solid in 2019 as in 2018," says Maeda.

The CA-CIB representative anticipates a better year in fiscal 2020, although he observes that equity underwriters have been conservative in the second half because of the equity backlogs. "The biggest challenge would be the debt availability to support all Jolco deals, because of the earnings stripping regulations," he says.

For Maeda, there would be several key challenges, including how the coronavirus situation will impact the aviation market that might have an impact on the position of the Jolco equity market.

Pierson agrees on the coronavirus effect in China and how the market (in Asia for lessors, airlines and low cost-carriers) will be impacted as one of the challenges for the upcoming fiscal year. Coupled with the political and economical environment (the US elections, Brexit and the US-China trade war), Asset Brok'Air is anticipating a more conservative trend in the Jolco market than in previous years with a lot of opportunities because of the market's volatility.

"Manufacturer delays are also impacting the market – aircraft delivery delays are happening far more often than before," says Maeda. "This is an important challenge for Jolco equity as pricing is really timing driven."

Jolcos done directly with lessors

A key finding in *Airfinance Journal*'s Jolco survey in recent years is the emergence of more Jolco transactions closed directly with operating lessors. This is a trend that will continue, believes Chedeville.

"The increasing percentage of Jolco transactions with lessors is a natural adjustment to the shift in aircraft ownership from airlines to lessors. [Many in the industry believe that by 2030 about 50% of the global aircraft fleet will be leased.] Historically, lessors were quite reluctant to use Jolcos because they wanted to maintain flexibility to efficiently trade their aircraft during the lease term, but to cope in the current competitive landscape and to maximise their ROI [return on investment], some lessors are tempted to leverage their aircraft investments through Jolcos on a selective basis," says Chedeville.

"Some of the equity arrangers are still less willing to work on Jolcos with lessors. Ultimately, a lessor is an investor like them and there is a risk – unlikely but technically possible – that in a downturn the lessor may elect not to exercise the purchase option while a combination of a longer lease tail and more stringent redelivery conditions could be a good enough deterrent to non-exercise of the purchase option," explains Chedeville.

"Airlines are generally considered safer to the Japanese because they have fixed schedules and routes and they really rely on the aircraft to meet their numbers. At the end of the Jolco term, the aircraft still has an economic useful life and there is very little rationale for an airline to decide to drop the asset that started to amortise on its balance sheet. The aircraft becoming obsolete could trigger such behaviour," he adds.

Top lessees by number of aircraft

Jolco transactions - 2019

Rank	Lessees	N of a/c
1	LATAM	16
2	Vietjet Air	12
3	SAS	10
4	Lufthansa	9
5	Vueling	8
5=	British Airways	8
5=	Wizz Air	8
5=	Copa Airlines	8
9	Avianca	6
9=	Virgin Australia	6
11	Pegasus Airlines	4
11=	KLM Royal Dutch Airlines	4
13	Turkish Airlines	3
13=	Go Air	3
13=	Ethiopian	3
13=	El Al	3
	Other	23

**Sources: AFJ Jolco Survey and AFJ Deal Tracker*

Top law firms

Jolco transactions - 2019

Rank	Law firms	N of a/c
1	Nishimura & Asahi	49
2	Allen & Overy	38
3	Norton Rose Fulbright	37
4	White & Case	36
5	K&L Gates	31
6	Clifford Chance	20
7	Watson Farley & Williams	16
8	Milbank	13
8=	Bryan Cave	13
10	Walkers	10
10=	Mannheimer Swartling Advokatbyra	10
10=	McCann FitzGerald	10
13	King & Wood Mallesons	9
14	Winston & Strawn	8
15	Herbert Smith Freehills	6
	Other	74

**Sources: AFJ Jolco Survey and AFJ Deal Tracker*
***Numbers are not additive as credit for some transactions is given to more than one party*

The vetting process for a new lessor participant in a Jolco transaction is very similar to that of an airline participant. Attention must be paid to the details, including credit and reputation.

"Not every Japanese investor is comfortable entering into Jolco deals with lessors. They will look at the lessors individually. A few years ago, I would have said yes most Japanese don't want to do Jolco deals with lessors and I would have said the same with regards to many of the LCCs [low-cost carriers]. But that has changed since. If the lessor credit and reputation are sound, the credit of the underlying lessee is good and the deal's economics are decent, it is quite likely the lessor can find Jolco investors," says Chedeville.

Another reason for more Jolco transactions done directly with lessors in 2019 was the aforementioned surplus of Japanese equity in the market that has driven returns down and created a demand-supply imbalance.

"One of the reasons for the increasing percentage of Jolco transactions with lessors in recent years is probably partly because of too competitive market conditions that lasted until recently where some of the equity arrangers tried to work on new names to avoid too much competition for more traditional names, which changed the equity demand-supply balance and caused equity backlog struggles for some of the Japanese equity," adds Chedeville.

Proliferation of vintage Jolco refinancings

Another key finding from studying the data is the proliferation of Jolco financing and refinancing applied to older aircraft assets rather than brand new units. Our panel of experts agrees that this is largely the result of the risk-averse Japanese equity becoming more comfortable with these transactions, although some concerns as to their ROIs remain.

"There are a few differences [between Jolco financings and Jolco refinancings]. For a start, the depreciation numbers look different. Typically for a vintage aircraft your depreciation profile is shorter so you're going to have a shorter lease and/or earlier buyout. The other thing is that the collateral value will be lower so potentially that's a greater risk to the equity. So it's a little more difficult in terms of placing the equity compared to a new aircraft. Structurally and legally there's no change," says White & Case's Collins.

"In the past there's been a strong preference from the Japanese investors for newer aircraft. This is slowly changing to include used assets. Used aircraft are riskier and the market is only slowly becoming less risk averse," he adds.

The one-million-dollar question, however, is: are investors well advised to put their money into used aircraft or would they be better off investing in new aircraft?

"There's a new breed of market players who are actively sourcing those older asset deals and selling them in the Jol and Jolco market, primarily because older assets allow a better tax play through the same amount of depreciation over a shorter time period. Now, when they do that, are they mindful of what the actual value is at the end of the lease term? Some of the deals I've looked at I question if they really make sense at the end of the day in terms of whether they are worth the undertaking. At least that's my view," says Tokyo Century's Takamasa.

Beyond the traditionally popular Jolco aircraft types such as new A320 and A320neo-family aircraft, A350s and 787s, recent refinancings for vintage aircraft

Type-models

Jolco transactions - 2019

Rank	Type-models	N of a/c
1	Airbus A320neo	42
2	Airbus A321neo	21
3	Airbus A320-200	14
4	Boeing 737-800	11
5	Airbus A350-1000	9
5=	Airbus A350-900	9
7	Boeing 737 Max9	8
8	Boeing 787-9	4
9	Airbus A321-200	3
10	Boeing 747-400F	2
10=	Boeing 787-8	2
10=	ATR72-500	2
13	Boeing 777F	1
13=	Airbus A350-900	1
13=	Boeing 787-10	1
13=	Airbus A330-300	1
13=	Boeing 747-400ERF	1
13=	Boeing 777-300ER	1
13=	Boeing 737 Max8	1

**Sources: AFJ Jolco Survey and AFJ Deal Tracker*

include Credit Agricole-CIB's Jolco deals with Cargolux for a 747-8F and a 747-400F. That transaction marked the first Jolcos for a pure cargo operator outside Japan. Equally noteworthy is MUFG and ABL Aviation's transaction involving six LATAM 2013-vintage A320s.

New players enter market

On the arranger and lender front, 2019 participants in Jol and Jolco financings have remained largely the same as in previous years, although treaty lenders are far less involved because of the tax law change coming into effect on 1 April.

Airline participants are becoming much more diversified in recent years, however, and 2019 was no exception. More airlines

"Some of the deals I've looked at I question if they really make sense at the end of the day in terms of whether they are worth the undertaking."

Marito Takamasa, joint general manager and global head of marketing, Tokyo Century being approved for Jolco deals relates to the previously established fact that more Japanese equity is becoming more comfortable with certain lesser-known overseas entities and the general trend of the Japanese becoming less risk averse.

"There's definitely been new operating lessors that have entered the market in 2019 – I'm thinking about El Al, Vietjet, Cebu Pacific," says Collins.

Natixis's Chedeville agrees.

"Yes, many new lessees are trying to gain access to the Jolco market. Nowadays you have a lot of low-cost airlines benefiting from it. Over the recent years, Natixis arranged a Jolco for Thai AirAsia, an affiliate of the AirAsia group. Natixis also arranged Jolco transactions for Vietjet, a pretty young LCC that has captured the bulk of the Vietnam domestic market over the last decade. In the past, an LCC with such a large orderbook may not have gotten much traction from Japanese tax investors," he says.

Airfinance Journal data shows that, in 2019, more budget carriers took part in Jolcos than ever before. They include Vueling, Vietjet, Wizz Air, Pegasus Airlines and Go Air.

"As long as there's a good story to tell and the economics are decent, the Japanese investors will be willing to listen to a new lessee pitch. We have noticed new players coming in recent years. We also saw new structures being implemented. These are all good signs that the Japanese investors are willing to support innovative ideas," says Chedeville.

Nevertheless, the big Jolco names from years past still account for the largest number of transactions, including British Airways, SAS and Lufthansa.

The German flag carrier closed a record 19 Jolco transactions in 2019 for 15 A320neos and four A350-900s, totalling $1.3 billion, up from $278 million in 2018. Lufthansa typically finances new deliveries before refinancing the assets later.

"Twenty-nineteen was an extraordinary active Jolco year for us. Besides our regular funding activities, we used the favourable market environment to prepay existing unsecured debt and replaced it with Jolcos," says Lufthansa corporate finance specialist Matthias Eck.

The carrier has issued a request for proposals (RFPs) to Jolco equity providers for a proposed refinancing of four aircraft this year: two A350-900s and two A321neo aircraft. The $400 million RFP is expected to close in April.

"We still do see a strong demand for our Jolcos, both on the equity and debt side, but we do not plan to raise the same volume in the market as last year," says Eck, adding that the German airline does not anticipate any complications arising from the tax law change.

"None of our existing Jolco transactions will be affected by the new regulation, so we are pretty relaxed. We do not expect a noticeable effect on our Jolco campaigns as our debt RFPs are always significantly oversubscribed by eligible lenders," says Eck.

Turkish Airlines is another prominent tax lease user. Turkish has about 70 aircraft under Jolco structures. Chief financial officer, Murat Seker, has said Turkish Airlines closed the first Jolco in 2007 and since then the carrier has regularly tapped the Jolco market.

"A third of our financing is from the Japanese market and the Jolco. This shows how much we appreciate this product. Turkish Airlines is very loyal to Japanese investors and vice versa," he says.

Nirmal Govindadas, Emirates Airline's senior vice-president of corporate treasury, also only has praise for the Jolco structures.

"For the past five years, we have raised about $30 billion. In terms of Jolcos, we did financings of about $4 billion to $4.5 billion, comprising 22 777s and three A380s," says Govindadas.

"Jolco is not always the cheapest option, but it's reliable. It takes time to build relationships in Japan, but once they're established it goes very smooth," adds the Emirates treasurer. "It's a deep market. There's liquidity and diversity of investors."

Airbus A220 models loom large over Embraer E2 family

After Airbus's adoption of the A220, Embraer faces a competitor on a different scale to its old adversary Bombardier.

Projected demand for new products in the 100- to 150-seat market is relatively small with the segment forecast to account for 15% to 20% of the narrowbody market over the next 20 years, depending on which manufacturer's forecast you believe.

However, both Boeing and Airbus seem keen to establish themselves in the niche, albeit with the acquisition of existing products rather than with their own developments. Embraer's second-generation E-Jet family looks set to join the Boeing camp, antitrust permitting, and Bombardier's CSeries models are already established as Airbus A220s.

E2 family

Embraer launched the second generation of E-Jets at the 2013 Paris air show, designating the new models as E2 variants. The main changes for E2 models are the switch to Pratt & Whitney geared turbofan (GTF) engines and a redesign of the wings. Embraer says that fuel and maintenance costs of the latest generation of aircraft offer "double-digit savings" over their respective predecessors.

As part of a rationalisation of seating capacity, the new family includes only three models. The E190-E2 and the larger E195-E2 have entered service. The smaller E175-E2 has completed its first flight and is embarking on a certification process.

John Slattery, president and chief executive officer, Embraer Commercial Aircraft, speaking at *Airfinance Journal*'s Dublin 2020 conference in January, said he hoped to see the E175-E2 enter revenue service about December 2021. The aircraft arguably occupies its own niche and the first-generation version continues to sell well. The E190-E2 and E195-E2, however, face stiff competition from the smallest models in the Airbus family.

A strategic partnership with Boeing, which is targeting increased sales of the Embraer commercial aircraft programmes, is awaiting approval from a number of competition authorities – notably including the European Union. The partnership is in the form of a joint venture comprising the commercial aircraft and services operations of Embraer, in which Boeing will hold an 80% ownership stake and Embraer the other 20%. However, the negotiations on the deal and the resultant memorandum of understanding of July 2018 predate the US manufacturer's current difficulties resulting from the Boeing 737 Max grounding.

A220-300

Many commentators see the partnership as a response to the Airbus deal with Bombardier that appears to have significantly stimulated the sale of CSeries aircraft in their new A220 guise.

A220 models

The A220-100 and A220-300 models were originally designed and produced by Bombardier as the CS100 and CS300, respectively. Unlike Airbus's Neo family, Boeing's Max models and the second-generation E-Jets, the CSeries aircraft are all-new designs.

Bombardier originally claimed the clean-sheet design allowed the CSeries models to offer a fuel saving of 20% and a similar percentage advantage in cash operating cost over current-generation competitors. These figures have been eroded by the latest re-engined versions of the A320 and 737 families and by Embraer's E2 models, but the A220 retains an advantage because of its more advanced technology.

Airbus has assimilated the A220 into its family of aircraft and has announced increases in the range for both models, which should be available from the second half of 2020. In February, Airbus increased its stake in the A220 programme to 75% after Bombardier decided to dis-invest and sell its 31% share. The government of the Canadian state of Quebec holds the remaining 25% of the programme.

The A220 models are larger than their respective Embraer competitors and have outsold them significantly.

Views on values

A220 models

Since the CSeries programme was transferred to become the A220 in September 2017, sales have increased from 360 to well over 500 units. Senior ISTAT appraiser, Oliver Stuart-Menteth, managing director, Fintech Aviation, believes the upturn in sales of the A220 after the takeover is unsurprising.

He says: "Airbus not only has the resource and financial clout to sell and further invest in the programme, but also can offer the aircraft as a route opener, complementing the A320neo. Assuming that Airbus continue to accumulate firm orders then values will firm up."

Key data A220-100/-300 and E190-E2/E195-E2

Model	A220-100	A220-300	E190-E2	E195-E2
Maximum seats	133	160	114	146
Typical seats	108	140	106	132
Range (nm/km)	3,400/6,300*	3,350/6,200*	2,850/5,280	2,600/4,800
Entry into service	2016	2016	2018	2019
Total orders	76	445	44	124

Source: Airfinance Journal research/Fleet Tracker February 2020
**From mid-2020.*

However, Stuart-Menteth believes that selling new A220s may prove difficult to some airlines because many target carriers are able to command very competitive lease rates from 10- to 12-year-old aircraft, which will satisfy the requirements of a large proportion of potential A220 operators.

Lower fuel pricing also partially negates the advantages of acquiring newer technology engines, which are probably at least as expensive as current models to put through overhaul shops. In addition, in the current market, lessors are willing to absorb significant bridging costs to put their older assets on lease.

Despite these difficulties and the relatively small market size, Stuart-Menteth believes there is no doubt that financiers will be taking a more positive view of the A220 because of the involvement of Airbus. He adds that the market is beginning to view the A220 as a flexible aircraft, as typified by Air Canada launching a Toronto-San Jose route, which has a sector time of about five hours.

Embraer E2 variants

Stuart-Menteth suggests the continuing sales slump of the E190-E2 and E195-E2 indicates that airline interest in replacing or expanding existing fleets with the E2 models has not yet materialised. Between the first quarter of 2018 and the third quarter of 2019, the E190-E2 has recorded a net reduction in firm orders from 74 to 44 while the E-195-E2 has registered just an additional 18 sales, taking it to 124 in total.

Stuart-Menteth says: "The fact that, apart from Azul, no existing E-Jet operator has directly ordered E2s indicates that the market remains to be convinced." Existing E2 lessors also report that the market is very soft.

Fintech view of current market values and lease rates

Model	CMV ($m)	Lease Rate ($'000s)
A220-100	32.99	230-260
A220-300	36.84	250-280
E190-E2	30.87	210-240
E195-E2	34.44	230-260

Source: Fintech SAAV Guide

He adds: "Compared to the A220-100, the E195-E2 offers around 25% less fuel capacity and, whilst the majority of sectors will be two hours or less, the A220-100 and -300 do offer additional range flexibility."

According to him the extra cabin width of the A220 gives the impression and feel of a smaller sibling of the A320, albeit without the commonality that Airbus boasts for all other members of its family.

Fintech Aviation values and lease rates (*see above table*) are slightly below the average appraiser figures collated for *Air Investor 2020*. Nonetheless, the A220-300 appears good value, with a current market value about $10 million lower than an A320neo. This makes the aircraft particularly attractive for airlines that do not require the range of the larger A320 model.

Set against this, operators are increasingly taking advantage of the flexibility that longer-range models offer and this may prove a further handicap for the E2 models when competing against the A220.

New markets

Embraer sees Asia-Pacific as a key area for sales of the second-generation E190/E195 models. Slattery, is reported to have spoken at the Singapore air show in characteristically forthright terms about the importance of the region for the Brazilian manufacturer.

Embraer's 20-year outlook indicates nearly 30% of all commercial aircraft with up to 150 seats will be delivered in Asia-Pacific, of which two-thirds, or about 2,000, will be conventional aircraft rather than turboprops. Slattery says Embraer holds about 35% market share globally in the sub-150-seat segment and he is looking to maintain that in Asia-Pacific.

He reportedly believes that Embraer's second-generation E2-aircraft family can help address a key issue for Asian operators, namely lower margins per seat. Slattery sees the development of low-cost carriers in the region as a key driver of the demand for aircraft in the size category of the Embraer family.

According to its global market forecast, Airbus also sees Asia-Pacific as a driver of sales but the recent announcement that Green Africa Airways intends buying 50 A220s suggests that the often overlooked African region might provide a significant new market for aircraft in the E-Jet- and A220-size category.

If the letter of intent from the Nigerian carrier is converted to a firm order, it would be one of the largest orders to date for the A220.

Aircraft characteristics

	E190-E2	E195-E2	A220-100	A220-300
Technical characteristics				
MTOW (tonnes)	56.4	61.5	63.1	69.9
OEW (tonnes)	33.0	35.7	35.2	37.1
MZFW (tonnes)	46.7	51.8	50.3	55.8
Fuel capacity (litres)	16,500	16,500	22,040	22,040
Engines	2 x PW1919	2 x PW1919	2 x PW1521G	2 x 1525G
Thrust (lbf/kN)	19,000/85	23,000/102	21,000/93	23,300/103
Fuels and times				
Block fuel 200nm	1,140kg	1,260kg	1,330kg	1,370kg
Block fuel 500nm	2,300kg	2,440kg	2,450kg	2,510kg
Block time 200nm	51 minutes	51 minutes	54 minutes	54 minutes
Block time 500nm	89 minutes	89 minutes	94 minutes	94 minutes

Source: Airfinance Journal/Air Investor

Uncertainty awaits Max's return

On its eventual return to service, Boeing's 737 Max will need to match Airbus's buoyant A320. **Geoff Hearn** looks at whether the grounding has impacted the troubled aircraft's competitiveness.

After halting production of the grounded Boeing 737 Max in December, the US manufacturer's commercial aircraft division went on to announce a $6.7 billion full-year operating loss for 2019 as the impact of the grounding weighed on its performance.

The manufacturer is hoping that aircraft will return to service from the middle of 2020, although there continue to be glitches. The US Federal Aviation Administration (FAA) remains cautious and has not committed to a definitive timescale. Speaking at the Singapore air show in February, FAA administrator, Steve Dickson, was reported as saying that the FAA certification flight had not been scheduled because there were still issues to resolve, and that the authority was "waiting for proposals from Boeing on a few items".

Another concern for the US OEM is that it is unclear how long authorities around the world will take to ratify any decision by the FAA to allow the aircraft back into service. Dickson says he expects close technical alignment between regulators, but notes there could be differences in how the aircraft is returned to service in the various regulatory jurisdictions.

The prevailing view at *Airfinance Journal*'s Dublin 2020 conference in January was that, in the long-term, the Max programme would largely recover from the current crisis, but it was acknowledged that risks remain which threaten investor interests. The aircraft's competitiveness against the rival Airbus A320neo was also called into question.

Mark Streeter, managing director of airline/aircraft credit research for JP Morgan, touched on a concern among many at the conference that there would be a long-term impact on the Max programme.

"I do think that Boeing will inevitably feel the need to replace it sooner than they were thinking," says Streeter. "So if it was 2035 before, it is 2030 now. But this does not change the long-term view of the economic prospects."

He adds: "It is a common view that they oversold the Max into the leasing channel to big and small lessors, and, of course, the big lessors blame the small lessors for this. But there are some very low lease-rate-factor deals that are being cut right now. Part of the investor anxiety is that the appraised values of the Max are reflected into the economic value of those aircraft.

Boeing 737 Max 8

Airbus A320

"So far, we have not really seen appraisers materially act on what is going on with the Max. It is something that could be forthcoming as we start to see more differentiation to reflect the lease rates difference between the Max and the Airbus (A320neo) and then the evaluation between the Max and the Airbus."

IBA has published an appraiser's view of the situation, saying that values are impacted if the demand for the aircraft changes and, in particular, if there are large-scale cancellations. The long-term market position will define the residual value profile for the aircraft. If the 737 Max is popular and remains a true competitor to the A320neo,

Key data A320neo versus 737 Max 8

Model	A320neo	737 Max 8
Maximum seats	180	200
Typical seats	150	162
Range (nm/km)	3,750/6,950	3,510/6,510
Entry into service	January 2016	May 2017

Source: Manufacturer data and *Airfinance Journal* research then the long-term performance should remain unaffected until transactions say otherwise. On the other hand, if the market were to turn on the Max such that it becomes an interim solution, the long-term residuals will naturally be affected. Boeing has invested heavily in this aircraft and defining it as interim should not even cross the manufacturer's mind, but it remains a remote risk if the market should turn against the aircraft.

Mike Yeomans, head of valuations, IBA, tells *Airfinance Journal*: "It is important that appraisers reflect what is happening in the market. While the Max has been grounded we have not been seeing trades in the market, so IBA's approach has been to maintain our value opinion as it was prior to the grounding."

He adds: "The orderbook and customer base prior to the grounding has remained stable, excluding cancellations associated with airline insolvency. So our long-term view remains unaltered and this is reflected in our stable base value forecast. If we see a change in the market dynamics when the Max comes back into service, we will reassess at that point, guided by data points we see in the market."

Current total orders for Neo and Max families

Type	Orders	Type	Orders
A319neo	82	737 Max 7	67
A320neo	3,939	737 Max 8	3,851
A321neo	3,311	737 Max 200	135
		737 Max 9	352
		737 Max 10	534
Total Neo	**7,332**	**Total Max**	**4,939**

Source: *Airfinance Journal* Fleet Tracker 15/02/20

Neo and Max family deliveries

Type	In service/stored*	Type	Parked*
A319neo	0	737 Max 7	0
A320neo	912	737 Max 8	355
A321neo	300	737 Max 200	0
		737 Max 9	28
		737 Max 10	0
Total Neo	**1,212**	**Total Max**	**383**

Source: *Airfinance Journal* Fleet Tracker 15/02/20
*Stored implies a longer period out of service while parked suggests a more temporary stay

Orders

Sales of the Max family lag well behind those of the A320neo models, with the Airbus family boasting a lead of more than 2,000 aircraft and the European manufacturer is inexorably outpacing its US rival in terms of the operating fleet.

Airfinance Journal's Fleet Tracker shows that more than 1,200 Neo-family aircraft are in service, compared with fewer than 400 Max-family members that have been delivered and stored. How quickly these aircraft will be returned to service once the grounding is lifted is a matter of conjecture, but it undoubtedly complicates Boeing's catch-up task.

Although the A320neo has its own problems, Airbus is beginning to benefit from the Max grounding. Yeomans says: "In IBA's view, the grounding of the Max has positively impacted Airbus's narrowbody programme. Since the grounding on 10 March 2019, there have been over 1,000 orders for A320neo-family aircraft, while the 737 Max models have attracted just 32 new orders."

Yeomans believes the A321neo, particularly the longer-range versions, stands to gain from the situation. It appears that Boeing's New Midsize Airplane (NMA) has suffered a significant setback because of the Max grounding, which has consumed the manufacturer's resources and focus over the past 12 months.

The A321XLR, launched at the 2019 Paris air show, sits in the middle of the market in terms of its capacity and range. Without a clear competitor in the form of the NMA, the A321XLR is strengthening its position in this segment.

However, Airbus faces its own challenges. Yeomans points out that, by the manufacturer's own admission, A320neo production is sold out until 2025, which implies a need to increase production rates. However, challenges in producing the latest Airbus Cabin Flex (ACF) version of the A321 held back 2019 production, which fell 20 to 30 units below forecast. The ACF-related challenges are expected to endure through 2020.

There are also potential supply chain problems arising from the coronavirus outbreak, which has already prompted the shutdown of the Chinese assembly line in Tianjin.

Operating cost

Previous cost analysis by *Airfinance Journal* has indicated that the Max 8's cash operating costs are about 3% higher than those of an A320neo on a 500-nautical mile route. This equates to a seat-cost advantage of about 5% for the Boeing model. On the other hand, the A321neo provides significant cost advantages over the Max 9 – a situation that is only partially addressed by the increased seating offered by the Max 10

At less than $2 per US gallon, the current fuel price is below the level envisaged when the Neo and Max families were launched and, consequently, the competitiveness of the newer models over their predecessors is not as high as envisaged by the manufacturers. However, the lower fuel price has virtually no impact on the relative costs of the Max and Neo models.

The nominal cash operating cost figures of the Max are unlikely to be altered by the aircraft's grounding because the modifications being introduced as a result do not appear to involve significant additional ongoing maintenance costs. The simulator training that is being stipulated as one of the requirements for returning the Max to service will have an impact on training costs, but who pays for it will be the subject of negotiation. The situation for total operating costs (including capital) will be less clear if the grounding of the Max starts to impact on investor confidence and values.

At the moment, the prevailing market perception is that the longer-term value of the Max will be unaffected. If this view continues then the A320neo and Max 8 will remain very close in operational efficiency. Seating requirements and negotiated pricing will drive airline selections, but availability is likely to be a key factor for most potential customers.

How the grounding will impact availability is a matter of conjecture, but any extension beyond the anticipated mid-2020 return is unlikely to help.

Rating agency unsecured ratings

Airlines

	Fitch	Moody's	S&P
Aeroflot	BB(stable)	-	-
Air Canada	BB(stable)	Ba1(stable)	BB+(stable)
Air New Zealand	-	Baa2(stable)	-
Alaska Air Group	BBB-(stable)	-	BB+(stable)
Allegiant Travel Company	-	Ba3(stable)	BB-(stable)
American Airlines Group	BB-(stable)	Ba3(stable)	BB-(stable)
Avianca Holdings	CCC+	-	B-(stable)
British Airways	BBB-(pos)	Baa3(pos)	BBB(stable)
Delta Air Lines	BBB-(stable)	Baa3(pos)	BBB-(stable)
Easyjet	-	Baa1(stable)	BBB+(stable)
Etihad Airways	A(stable)	-	-
Grupo Aeromexico	-	B1(stable)	BB-(neg)
GOL	B+(stable)	B1(stable)	B(stable)
Hawaiian Airlines	BB-(stable)	Ba3(stable)	BB-(stable)
Jetblue	BB(pos)	Ba1(stable)	BB(stable)
LATAM Airlines Group	BB-(stable)	Ba3(stable)	BB-(stable)
Lufthansa Group	-	Baa3(stable)	BBB(stable)
Qantas Airways	-	Baa2(stable)	-
Ryanair	BBB+(stable)	-	BBB+(stable)
SAS	-	B1(stable)	B+(stable)
Southwest Airlines	A-(stable)	A3(stable)	BBB+(stable)
Spirit Airlines	BB(neg)	-	BB-(stable)
Turkish Airlines	-	B1(neg)	B+(stable)
United Airlines Holdings	BB(stable)	Ba2(pos)	BB(pos)
Virgin Australia	B+(stable)	B2(stable)	B+(stable)
Westjet	BB-(pos)	Ba3(stable)	B+(stable)
Wizz Air	BBB(stable)	Baa3(stable)	-

Source: Ratings Agencies - 24/02/20

Lessors

	Fitch	Moody's	S&P	Kroll Bond Ratings
AerCap	BBB-(stable)	Baa3(pos)	BBB(stable)	-
Air Lease Corp	BBB(stable)	-	BBB(stable)	A-(stable)
Aircastle	BBB-(pos)	Baa3(stable)	BBB-(stable)	-
Avation PLC	BB-(stable)	-	BB-(stable)	-
Aviation Capital Group	BBB-(stable)	Baa2(stable)	BBB-(stable)	A-(stable)
Avolon Holdings Limited	BBB-(stable)	-	BBB-(stable)	BBB+(stable)
AWAS Aviation Capital Limited	-	Baa3(stable)	BB+(stable)	-
BOC Aviation	A-(stable)	-	A-(stable)	-
CDB Aviation Lease & Finance	A+(stable)	A1(stable)	A(stable)	-
Dubai Aerospace Enterprise	BBB-(stable)	-	BB+(stable)	BBB+(stable)
Fly Leasing	-	Ba3(pos)	BB(stable)	BBB(stable)
ILFC (Part of AerCap)	BBB-(stable)	Baa3(pos)	-	-
Park Aerospace Holdings	BBB-(stable)	Baa3(stable)	-	-
SMBC Aviation Capital	A-(stable)	-	A-(stable)	-
Voyager Aviation	BB-(stable)	-	B+(stable)	BB-(stable)

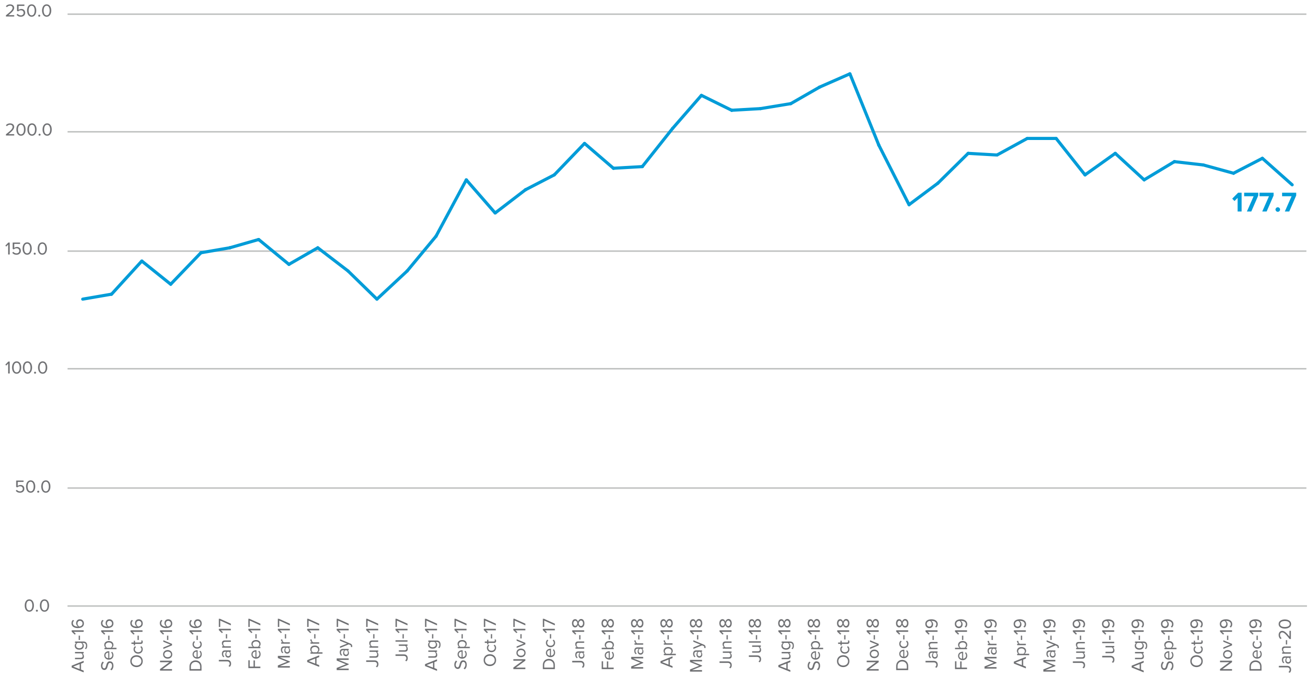
Source: Ratings Agencies - 24/02/20

Manufacturers

	Fitch	Moody's	S&P
Airbus Group	A-(pos)	A2(stable)	A+(stable)
Boeing	A(neg)	Baa1(stable)	A-(watch neg)
Bombardier	CCC+(stable)	B3(neg)	B-(stable)
Embraer	BBB-(neg)	Ba1(stable)	BBB
Rolls-Royce plc	BBB+(stable)	Baa2(stable)	BBB-(stable)
United Technologies	-	Baa1(stable)	BBB+

Source: Ratings Agencies - 24/02/20

US Gulf Coast kerosene-type jet fuel (cents per US gallon)



Source: US Energy Information Administration

Recent commercial aircraft orders (January-February 2020)

Customer	Country	Quantity/Type
All Nippon Airways	Japan	1 787-9, 11 787-10
Air Senegal	Senegal	8 A220-300
Air France	France	10 A350-900
BOC Aviation	Singapore	20 A320neo
Cebu Pacific Airways	Phillipines	5 A320neo, 10 A321neo
Air Lease	USA	50 A220-300, 52 A321neo, 1 A350-900
Spirit Airlines	USA	47 A319neo, 33 A320neo, 20 A321neo
CALC	China	40 A321neo
Skywest	USA	20 E175
PNG Air	Papua New Guinea	3 ATR42-600S
Avation	Singapore	2 ATR72-600

Spirit Airlines has ordered 33 A320neo aircraft

Based on *Airfinance Journal* research up to 24/02/20

Current production aircraft values ($ million)

Model	Current market value*
Airbus	
A220-100	33.2
A220-300	37.8
A319	34.3
A319neo	37.2
A320	43.7
A320neo	49.3
A321	51.8
A321neo	57.1
A330-200	85.9
A330-200 Freighter	94.4
A330-300	98.2
A330-900 (neo)	110.4
A350-900	149.4
A350-1000	169
A380	219.2
Boeing	
737-800	46.3
737-900ER	48.6
737 Max 8	51.3
737 Max 9	52.5
747-8I	155.6
747-8F	183
777-300ER	153.9
787-8	118.5
787-9	143.6
787-10	150.5
ATR	
ATR42-600	16.2
ATR72-600	20.2
Bombardier	
CRJ700	24.1
CRJ900	26.2
CRJ1000	28.2
De Havilland Aircraft of Canada	
Dash8-400	20.7
Embraer	
E175	28.5
E190	32.1
E190-E2	34.5
E195	33.9
Sukhoi	
SSJ100	23.3

*Based on ISTAT appraiser inputs for Air Investor 2020

Lease rates ($'000 per month)

Model	Low	High	Average
Airbus			
A220-100	204	262	233
A220-300	276	303	289.5
A319	230	283	256.5
A319neo	266	293	279.5
A320	295	353	324
A320neo	340	383	361.5
A321	350	424	387
A321neo	380	444	412
A330-200	640	745	692.5
A330-200 Freighter	657	715	686
A330-300	690	833	761.5
A330-900 (neo)	801	872	836.5
A350-900	1,050	1,195	1,122.5
A350-1000	1,233	1,342	1,287.5
A380	1,503	1,950	1,726.5
Boeing			
737-800	310	364	337
737-900ER	330	394	362
737 Max 8	350	394	372
737 Max 9	368	404	386
747-8I	990	1,264	1,127
747-8F	1,178	1,570	1,374
777-300ER	1,050	1,300	1,175
787-8	815	931	873
787-9	950	1,200	1,075
787-10	1,053	1,146	1,099.5
ATR			
ATR42-600	117	153	135
ATR72-600	144	185	164.5
Bombardier			
CRJ700	153	220	186.5
CRJ900	170	235	202.5
CRJ1000	182	255	218.5
De Havilland Aircraft of Canada			
Dash8-400	140	200	170
Embraer			
E175	205	240	222.5
E190	230	275	252.5
E190-E2	239	263	251
E195	211	280	245.5
Sukhoi			
SSJ100	153	205	179

Commercial aircraft orders by manufacturer

	Gross orders 2020	Cancellations 2020	Net orders 2020	Net orders 2019
Airbus (31 January)	122	5	117	768
Boeing (31 January)	0	0	0	54
Bombardier	0	0	0	15
De Havilland of Canada	0	0	0	10
Embraer	20	0	20	55
ATR	5	0	5	43

Based on Airfinance Journal research and manufacturer announcements until 24/02/20

How manufacturer problems deflated my bubble

Adam Pilarski, senior vice-president at Avitas, says the current deviation from the well-accepted relationship of economic and aviation cycles makes the life of forecasters very difficult.

For a long time forecasters and practitioners of aviation developments used a well-documented and universally accepted truth that aviation is highly dependent on economic developments. As people make more money they tend to spend more on luxury goods of which air travel is one. In times of recession people still have to eat but they can curtail holidays. These causal relationships served us well in predicting traffic, demand for aircraft and leasing, profitability and many other variables.

So it is with a heavy heart that I must admit that recently I was wrong. I used the well-proven relationships to assume that with the relentless expansion of orders and deliveries we faced for the last number of years we will reach an imbalance, which will have to lead to a necessary adjustment. I believed that there were simply way too many aircraft in service and plans for too many being further added to allow the situation to continue.

I understood the specific rationale for the unprecedented buildup of orders and deliveries but believed that the market would eventually overheat. This would lead, like it did in the past, to price wars resulting in declines in yield rates for lessors and airline ticket prices. Like in previous times, the result of these price wars to fill too many seats would cause some lessors and airlines to cease operating, grounding fleets until ultimately balance was restored.

But all this has not happened. World traffic did slow down but not because of what some analysts naively called "capacity discipline" to secure solid yields. Rather, capacity did not rise as expected because of supply factors related to manufacturers.

Simply, airlines and lessors did not add extra seats not because they were doing careful macroeconomic forecasts but rather they did not get the aircraft they desperately wanted to utilise which they had bought. They did not get the equipment because of a number of reasons.

First, all engine producers experienced plenty of production problems significantly affecting their output. Second, Airbus had its specific production problems, mainly related to the implementation of its Airbus Cabin Flex programme.


Our author at the *Airfinance Journal* Dublin 2020 conference.

> *So it is with a heavy heart that I must admit that recently I was wrong.*

This problem will not be resolved for another 18 months, Airbus has revealed.

Finally, the elephant in the room, was the grounding and temporary cessation of the Boeing 737 Max programme. This fact removed at least 800 units from potential supply last year with a continuous reduction of potential (ordered) supply for still some time. This development released a significant amount of the excess pressure of too many seats available in the market. All those manufacturing problems substantially deflated the bubble I had predicted.

So where are we going with all this? Forecasting is made much more difficult. Historically, we used the well-documented and validated relation between economic and aviation cycles. This relationship is temporarily suspended as aviation experiences a slowdown not related to the economy but to specific aviation structural problems.

Our present circumstances are very different than I had predicted earlier. The explainable and prolonged bubble did not explode. Rather, it was softened by supply considerations totally unrelated to the economic cycle.

With a strong economy we faced not as robust traffic and profit as we should have been expecting. The slowdown in traffic happened not because of, but despite, economic realities. The situation is further complicated by coronavirus, though it works in line with traditional relationships in that it causes both traffic and economy to decline.

The uncertainties related to the current production problems have little to do with the state of the economy but rather consist of a myriad of legal, technical and political issues. Old-fashioned scenario analysis might be the most useful technique to make predictions in today's world. One very negative such scenario could be the prompt return of Max aircraft, both parked and ready to be produced. Such an increase of supply could come at a time of a forthcoming worldwide economic downturn leading to calamities, losses for airlines and lessors, bankruptcies and financial losses.

A more benign scenario could have a recession-inspired traffic slowdown coinciding with low supply easing the potential ramifications of a downturn. Instead of large fleets being grounded by the imbalance, the industry would not produce the anticipated number of aircraft, sparing owners and purchasers of aircraft possible calamities.

Such a scenario would be most beneficial to many airlines and lessors, though not as positive to aircraft and engine suppliers. It would fit in nicely with my favourite saying: "I'd rather be lucky than good."

Despite wrong planning, we could be saved temporarily by incompetence leading to reduced supply just in time to avoid overheating, pushing the days of reckoning into the future.

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An *Airfinance Journal* special supplement

Regional aircraft 2020

Stakes high for **Boeing-Embraer joint venture**

The two manufacturers are awaiting the green light from the European Union, but are the reasons for the link-up still viable?

After Brazil's recent approval for Boeing and Embraer's planned joint venture (JV), the two companies face one last hurdle to nudging the tie-up over the line – a green light from the European Union.

Speaking at the *Airfinance Journal* Dublin 2020 conference on 22 January, Embraer chief executive officer (CEO) John Slattery said the Brazilian company was targeting the second quarter of this year for antitrust approval from European regulators.

"We want to be respectful of the authorities and don't want to put a timeline but it feels like the second quarter of this year. We are doing anything to accelerate this," he said.

"We have been working on this transaction over the past 12 months. The operators are feeling the pain and want the transaction to close," added Slattery.

But while regulatory approval may be close, much has changed in the years since the joint venture was first mooted in 2017.

Max grounding impact

With the grounding of the 737 Max and the resulting shift in trading conditions and management at Boeing, the question is whether the original rationale for the tie-up is still intact?

In its most recent financial disclosure, Boeing put the cost of the grounding to date at more than $18 billion.

The US manufacturer recently closed a $12 billion facility from a syndicate of banks as its cash flow continues to be hit by the grounding.

The second consequence has been the purging of the senior Boeing management, that originally approved the joint venture. In October, Kevin McAllister was replaced by Stan Deal as president and CEO of Boeing Commercial Airplanes. Two months later, Boeing CEO Dennis Muilenburg was fired and replaced with chairman David Calhoun. With the financial strain of the Max ongoing, could the new CEO question the viability of the joint venture with Embraer, or even call off the project completely?

Speaking on an analysts' call on 29 January, Calhoun said that Boeing was working towards the "full implementation of our Embraer partnership". But he disclosed little else on the topic.

Appraisers are divided on the prospects and advisability of pursuing the partnership.

"The Max grounding is diverting senior management attention and resources away from the JV but, ultimately, I think it will go through," says Doug Kelly, senior vice-president, asset valuation, Avitas.

"Clearly, this leaves Boeing in a challenged financial state," says Rob Morris, global head of consultancy at Ascend by Cirium. "They already spoke about having to go to the market to raise the $5.5 billion committed to this, since I guess they spent the finance earmarked for this on Max compensation and other

“We have been working on this transaction over the past 12 months. The operators are feeling the pain and want the transaction to close.”

John Slattery, chief executive officer, Embraer

costs. “Now that Max has gone long and they have had to raise that $12 billion load, perhaps some of that is earmarked for this JV. But with a new CEO, I wonder if there will be a fundamental review of the JV and it could potentially be cancelled since it is hard to see what benefit it brings to Boeing,” adds Morris.

Olga Razzhivina, senior ISTAT appraiser at Oriel, thinks the tie-up will get over the line.

“It is more likely that the JV becomes more important as the [737 Max] grounding continues. The fresh engineering resources can benefit both, addressing the Max issues and working on the new aircraft type – whatever shape it will take,” she says.

Kelly believes that closing the joint venture is more “critical” for Embraer than it is for Boeing.

“Without the JV, Embraer growth prospects are very limited. Now Embraer can participate in the development of a new middle-market airplane [NMA] if it happens and the new single-aisle along with a potentially new turboprop programme.

“It appears that Embraer has more to gain in the JV with the backing of its commercial programme from a much larger company,” says Razzhivina, adding: “Boeing gains engineering expertise, which usually takes time to nurture. There is also a potential to increase its footprint in Latin America.”

Morris says that when the joint venture was first mooted in late 2017, Cirium concluded it made sense for Boeing because it connected the US company to Embraer’s highly skilled engineering resources. But he says that “a lot has changed since 2017” – not only with the Max, but also with Embraer’s primary regional jet market, where Bombardier’s CRJ exit and the Mitsubishi SpaceJet’s continued development delays seem to have presented Embraer with a “de facto monopoly”.

New turboprop concept

Embraer’s plan for a possible turboprop programme adds another dimension to the joint undertaking.

Slattery observes that ATR has an effective monopoly in the turboprop market, which he says is stifling competition and innovation. He adds that the De Havilland Aircraft of Canada Dash8 was becoming increasingly irrelevant, with very few sales.

According to him, there will likely be two models of any Embraer turboprop, which will be slightly smaller than the E-Jet family. The aircraft will be in the same size range or slightly larger than the 70-seat ATR72.

Crucially, he says the programme is contingent on the joint venture with Boeing.

Cirium’s Morris is of the view that a turboprop concept could shift the whole rationale for the joint venture for both parties.

“Perhaps Embraer should just double down on selling the E2 and use funds generated there to do the turboprop on their own,” he suggests.

“Boeing was in the turboprop market many years ago when it owned De Havilland of Canada and the Dash8 programme. For various historical reasons largely linked to labour it wasn’t able to make a success of that and sold it to Bombardier.

“If one considers the potential size of the prize – our last fleet forecast published in 2019 predicts total turboprop market delivery value of $60 billion over the next 20 years compared to $1.56 trillion for single-aisle – I do wonder what shareholder value there will be for Boeing?”

Morris adds: “As for Embraer, I guess with the E2 establishing itself in the market and their business jet programmes stable, a new turboprop makes logical sense if they want to remain in the regional space. But I refer back to the relatively small market, and also note that the ATR is well established as a simple and effective design.”

Avitas’ Kelly believes that if the business case for an Embraer turboprop “makes sense”, he can see the desire to build an all-new turboprop to challenge ATR’s dominance in this market.

“It is more likely that the JV becomes more important as the [737 Max] grounding continues. The fresh engineering resources can benefit both.”

Olga Razzhivina, senior ISTAT appraiser, Oriel

“Without the JV, the new turboprop would not happen because of the large investment required,” he notes.

New product lines

Beyond a possible turboprop programme, could the joint venture deliver other product lines or enhancements to existing offerings from Embraer or Boeing?

“The new turboprop seems to be gaining momentum but beyond that the future is less clear on new product lines,” says Kelly.

“Obviously, Embraer will continue marketing and improving the E2 product line over the near term. I still see Boeing launching the NMA, with 220 to 275 seats, sometime next year. Embraer will be able to contribute engineering resources to that design. I expect the new single-aisle will enter service around 2032.

“With the JV, Boeing’s focus will be on building the new single-aisle airplane for the 140- to 220-seat market, while leaving Embraer to design the most efficient airplane for the 100- to 140-seat category,” he adds.

Beyond a turboprop programme, Razzhivina believes that most of the input from the new entity is likely to take place “behind the scenes”, with Embraer engineers being deployed on Boeing projects.

Boeing’s attention may be preoccupied with fixing the Max, but closing the joint venture is, in the long term, likely to offer clear benefits for both parties.

Financing goes green

Can green loan financing improve pricing for borrowers?

Environmental, Social and Governance (ESG) ratings could become the focal point for future investments. The first green financing of an aircraft had to include two key components: an asset that has the means to be aligned with the green loan principles (GLP), developed by the loan market association (LMA) and an airline that is at the forefront of the ESG initiatives.

Braathens Regional Airways (BRA) has been proactive in this field, and it was natural that the Swedish regional carrier would be involved in the first transaction.

In February 2017, BRA performed its first biofuel flight, using a blended biofuel sourced from used cooking oil. The fuel for the flight was supplied by Air BP and was sourced and blended 45% to 55% with conventional fuel in California. The biofuel flight also marked the first time an ATR turboprop had used a biofuel blend on a commercial flight.

The carrier has developed several offers for its customers (individuals and companies) to encourage them to finance biofuel for their flights, by paying a surcharge – about €30 ($32) per ticket. After a flight, and depending on the number of passengers who paid the surcharge, the aircraft is refuelled with the appropriate amount of biofuel, and is based on a fixed-cost equivalent to an average flight time of one hour.

BRA was also the first commercial airline to offset 110% of its emissions of green house gas (GHG), in 2019. The Swedish airline aims to reduce GHG emissions by 50% per passenger by the middle of this decade, and aims to become fossil-free by 2030.

Its chief executive officer, Geir Stormorken, says: “We have made a commitment to decrease our environmental impact and the ATR is an essential part of our strategy. With that as a goal, it simply makes sense to choose the most-efficient aircraft. By replacing parts of our existing fleet of regional jets with ATR72-600 aircraft, we will emit 7,500 fewer tonnes of CO2 per aircraft, per year.”

For ATR, this green financing transaction confirms the high sustainable value of the ATR turboprop aircraft. “The ATR72-600 aircraft has a significant environmental advantage over regional jets and other turboprops emitting 40% less CO2. Turboprops are more efficient than jets on short sectors as they accelerate air using less power, so use less fuel,” states the manufacturer. Nicola Checcacci, vice-president customer and structured finance at ATR, says green financing perfectly fits its strategy and vision as an original equipment manufacturer (OEM).

“We want to be the most sustainable OEM and lead in this direction. ATR is investing in reducing carbon footprint,” he tells *Airfinance Journal*.

ATR is using the green financing to promote the true image of the turboprop, especially the ATR models, which are greatly positioned in the turboprop market.

“We need to change the perception of the turboprop. Turboprops are seen as old technology and old-fashioned aircraft, but today new turboprops are in line with what we expect in sustainable flying. It is a direct answer for airlines looking to reduce their carbon footprint. A 40% carbon footprint reduction over a regional jet on 300-nautical mile routes is significant,” says Pascal Campos, customer and structured finance director at ATR.

By issuing a green loan to finance the purchase of low fuel-consuming aircraft, operating lessor Avation coherently responds to its commitment in terms of development of a more sustainable aviation transportation, as well as addressing a crucial issue of the sector in terms of environmental contribution and responsibility.

The Singapore-based lessor may seek further opportunities to increase green finance options in the future, given the composition of its fleet, which includes the ATR72-600 and Airbus A220 types.

Green loan advantages

German financier Deutsche Bank provided and arranged a 10-year tenor senior loan that features an amortising tranche in euros.

The net proceeds from the loan will exclusively finance ATR72-600 deliveries for Avation. Three ATR72-600s have been placed under operating leases with Braathens.

Avation states that the eligible assets will be 100% financed with the loan proceeds. There will be no co-financing.

For Deutsche Bank, this deal is expected to pave the way for more green-focused financings in the aviation sector.

“Deutsche Bank is proud to have played a key role in the first green financing of a commercial aircraft,” says Richard Finlayson, head of global transportation finance, Asia.

“We’re hopeful that this leads the way for more sustainable financing activity in aviation, and increased adoption of lower carbon emission aircraft across the industry, to help make flying more eco-responsible,” he adds. The senior loan follows the green loan principles as structured by the LMA.

Independent agency Vigeo Eiris, which provides ESG ratings, believes the project of replacing ageing regional jets with new ATR72-600 aircraft at BRA is aligned with the GLP established by the LMA.

The agency assessed the coherence between the green loan and the borrower’s sustainability strategy and commitments, the loan’s potential contribution to sustainability and its alignment with the four core components of GLP 2018: use of proceeds, proceeds for project evaluation and selection, management of proceeds and reporting.

Vigeo Eiris carried out a due diligence assessment between 22 November and 13 December 2019. “We consider that the information made available enables us to establish our opinion with a reasonable level of assurance on its completeness, precision and reliability,” it says in a report.

The popularity of green bonds, and green finance in particular, has soared over the past few years, and issuers are taking advantage, as banks are more willing to invest in sustainable financing. The leverage to negotiate pricing from the borrower perspective is therefore expected to increase.

“More generally, green bonds may have a pricing advantage for borrowers against a similar non-green transaction. Pricing will be a few basis points less,” says Checcacci.

“Our expectation is that the pricing gap will increase in the future because more financiers and investors will be willing to participate in green sustainable projects.”

Campos says: “We see a few basis points advantage but it will increase with greater acceptance of the product and competition.”

He cites one recent request for proposal to finance ATR deliveries involving one bank, initially not interested in the transaction because of the credit quality, eventually stepping in when the loan requirement included a green loan financing option.

“We expect more appetite from banks to participate in sustainable financing projects in the future,” he adds.

ESG ratings could become the focal point for future investments but those are unlikely to feature most narrowbody and widebody aircraft.

Checcacci says: “Not all customers will be accepting this form of financing because the ESG rating agency is not only assessing the asset but also the project on a broader scale.”

ATR

ATR (Avions de Transport Regional) is a joint venture partnership which was established in November 1981 between Aerospatiale (now Airbus) and the Italian company Aeritalia (now Leonardo). Production is based in Toulouse alongside Airbus's commercial aircraft facilities.

The company's fortunes have been closely linked to those of turboprops in general. The 50-seat "regional jets mania" of the 1990s caused a decline in demand for turboprops, but there has been a significant revival since 2006, not least because the economic advantages of fuel-efficient turboprops increase as fuel prices rise.

The resurgence of commercial turboprop sales has been remarkable for a type of aircraft that many commentators and industry insiders thought had been made obsolete by the advent of the regional jet. ATR has been the chief beneficiary of this resurgence.

The Franco-Italian joint venture has sold more than 1,750 aircraft, of which about 1,550 have been delivered.

ATR manufactures two sizes of turboprop aircraft: the 70-seat ATR72 and the 48-seat ATR42.

The original ATR42 entered service at the end of 1985. The first commercial operations of the ATR72 followed four years later in 1989. Both aircraft types have been the subject of several major upgrades and current-production aircraft are designated as -600 models.

Over the past decade, ATR has been challenged to produce a bigger aircraft. There has been speculation that ATR would add a stretched 90-seat version to its product line, but the company has dampened expectations that it will launch such an aircraft. Instead, it has produced a 78-seat high-density ATR72-600 version.

The aircraft benefit from the inherent advantages of the turboprop design in terms of fuel efficiency, and relatively low emissions and cost efficiencies, particularly on shorter sectors.

There is some recent evidence that the market may have peaked and sales are becoming harder to come by. While De Havilland Aircraft of Canada, by acquiring the Bombardier Q Series, is still a viable competitor, ATR will also have to acknowledge Embraer's potential plans for a new 70- to 90-seat turboprop.

In 2018, ATR booked firm orders for 52 aircraft, comprising 23 ATR42-600s and 29 ATR72-600s. This compared with 113 aircraft in 2017 and 36 in 2016.

At the time of going to press, ATR had not released its 2019 sales figures, but *Airfinance Journal* had recorded 43 firm orders by 31 December 2019.

Lessors

An appetite for the types has also emerged from the leasing community. The manufacturer attracted orders from GECAS, Air Lease, DAE Capital and Avation as well as Nordic Aviation Capital (NAC) in the early 2010s.

But NAC has been the constant and reliable leasing partner since 2003. The Danish-based lessor's 105 ATR-600 aircraft announcement at the 2019 Paris air show confirmed NAC's dominance of this segment.

Deliveries, which are scheduled between 2020 and 2025, will extend the lessor's pipeline of new deliveries when its previous order, for up to 75 ATR aircraft in 2014, ends delivering this year.

NAC's confidence in the ATR-600 is a testimony of its relationship over the years because it has had a history of signing large aircraft orders.

"Our order has certain clauses, but we have some flexibility as to switching models within a relatively short notice period. ATR has become very flexible over the year, which is appreciated," said NAC's chairman Martin Moller last summer.

At the time, the lessor had more than 200 ATR aircraft in its portfolio.

ATR42-600 STOL

Last autumn, ATR received approval to offer the short-take-off-and-landing (STOL) variant of the ATR42-600 model, and announced three orders for the variant.

The manufacturer tells *Airfinance Journal* it has received a commitment for three units of the ATR42-600S on top of the 10 orders from leasing company Elix Aviation Capital, two from Air Tahiti and five from an undisclosed customer which it first revealed at the Paris air show.

Certification of the ATR42-600S is expected to occur in the second half of 2022 and the first delivery of the type is expected in 2023. The STOL variant will allow airlines to operate at small airports.

"Adding the ATR42-600S to our family makes total sense and paves the way for the company's future," says ATR chief executive officer Stefano Bortoli.

"There is a huge potential for 50-seater aircraft and the ATR42-600S could help airlines widen their horizons, as it can reach up to around 500 new airports across the globe. This is clear illustration of our dedication in helping more people and more remote communities benefit from being part of a connected world and in a sustainable way," he adds.

First ATR72-600F deliveries

This year will be key for ATR's new-build freighter, because launch customer FedEx Express is expected to take delivery of the first of 30 aircraft it has on backlog.

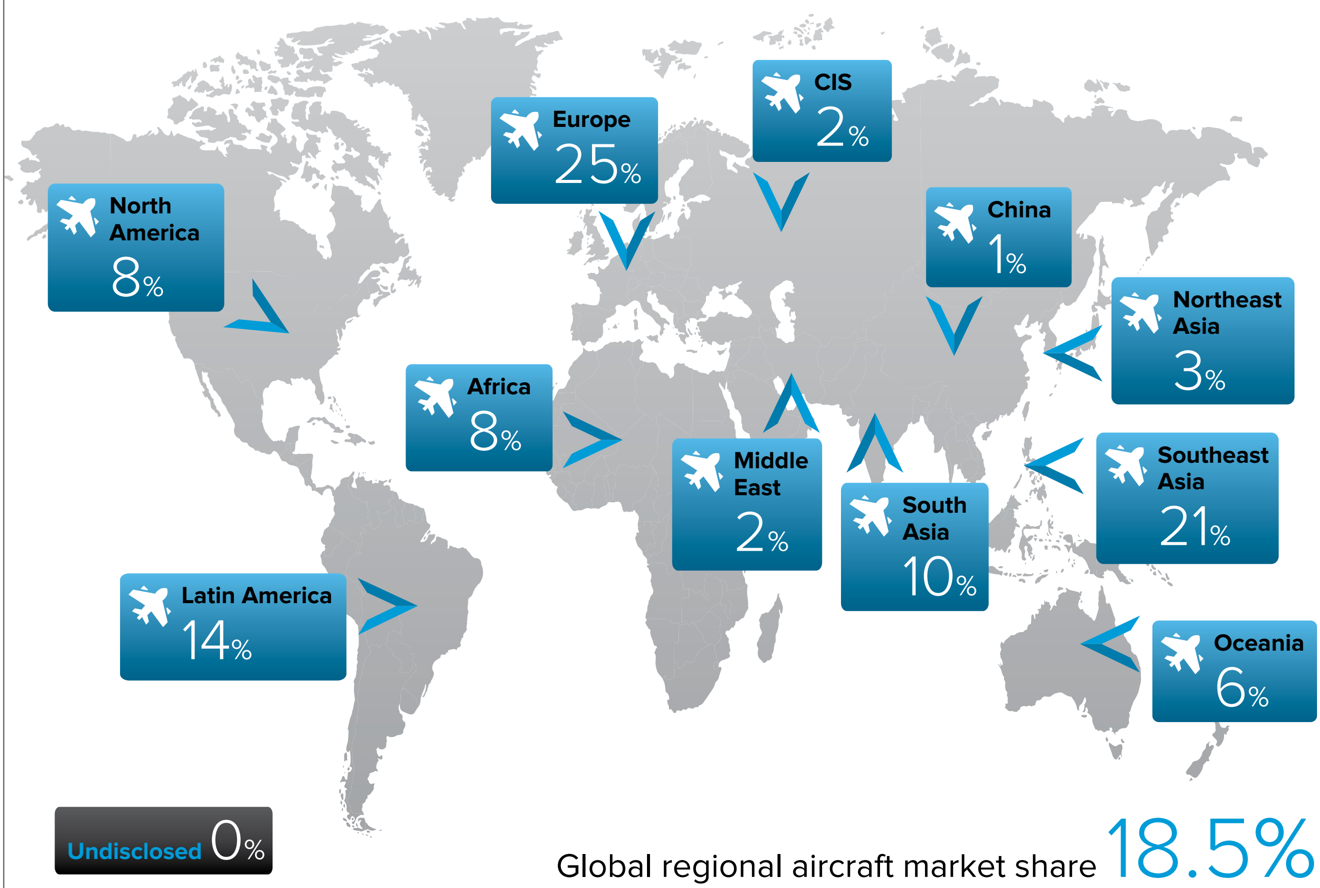
The cargo carrier, which operates converted ATR42 and ATR72 freighters, placed an order for 30 new ATR72-600Fs along with 20 options in 2017. These will be the first ATR turboprops built specifically for cargo service, rather than converted from passenger aircraft.

Sporting a windowless fuselage, the new freighter will feature a forward large cargo door, a rear upper-hinged cargo door and reinforced floor panels.

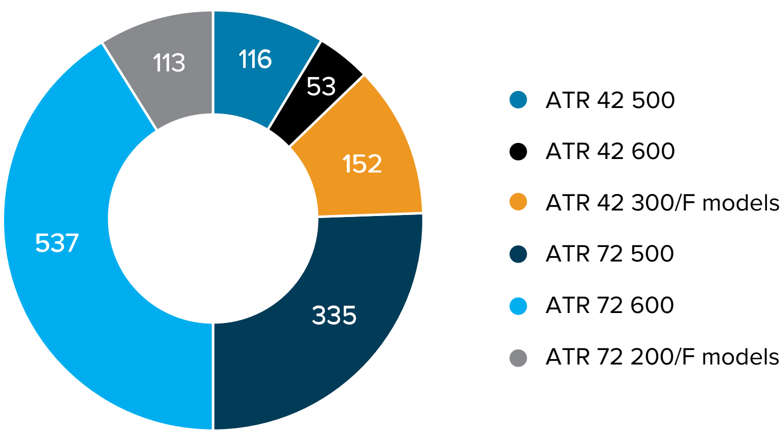
It will support both bulk cargo and unit load device configurations, with a bulk capacity of 74.6m3, or space for up to seven LD3 containers in unit load device mode.

Bortoli says the ATR72-600F model represents more than 10% of the ATR backlog and the aircraft will be a game-changer for the freighter market.

ATR: Region of operation of current fleet



Global regional aircraft market share 18.5%



1,306 ATR aircraft in the current fleet

Source: *Airfinance Journal*'s Fleet Tracker

Bombardier

Less than two years ago, Bombardier was still in control of its commercial aircraft portfolio: the Q Series, the CRJ Series and the CSeries, as it was known at the time.

Today, all of that is gone or about to disappear after the Canadian manufacturer's decision to sell its remaining 31% stake in Airbus Canada Limited Partnership (ACLP), the holding company of the A220 (successor of the CSeries); its final divestment from its commercial aircraft business.

Consistent with Bombardier's five-year turnaround plan, and after a comprehensive review of strategic alternatives, the company has pursued various avenues to strengthen its balance sheet and enhance shareholder value over the past three years.

In June 2018, Bombardier sold its Downsview property, the site of global business jet and Q400 regional turboprop production, to the Public Sector Pension Investment Board. Under the agreement, the manufacturer would continue to operate from Downsview for up to three years after closing of the deal, with two optional one-year extensions.

In November 2018, Bombardier announced the sale of the Q Series aircraft programme, a year after selling a majority share in the CSeries programme to Airbus.

Six months later, it closed the sale of the Q Series aircraft programme assets to De Havilland Aircraft of Canada (formerly Longview Aircraft Company of Canada), an affiliate of Longview Aviation Capital, for gross proceeds of about $300 million. The agreement covered all assets and intellectual property and type certificates associated with Dash8-100/-200/-300 and Q400 operations at the Downsview manufacturing facility in Toronto.

Last summer, Bombardier entered a definitive agreement with Mitsubishi Heavy Industries for the sale of its regional jet programme for a cash consideration of $550 million and the assumption by Mitsubishi Heavy Industries of liabilities amounting to about $200 million.

Mitsubishi Heavy Industries would acquire the maintenance, support, refurbishment, marketing and sales activities for CRJ Series aircraft, including the related services and support network in different locations, as well as the type certificates.

Then, news emerged early this year that Bombardier was considering a full exit from the Airbus A220 because of revised estimates about programme returns.

"While the A220 programme continues to win in the marketplace and demonstrate its value to airlines, the latest indications of the financial plan from ACLP calls for additional cash investments to support production ramp-up, pushes out the break-even timeline and generates a lower return over the life of the programme," it said.

Bombardier held a 31% stake in ACLP, the joint venture with Airbus and Investissement Québec (which held 19% and acts for the government of Québec), when Airbus announced on 13 February that it was increasing its stake to 75% under a deal that would also see the Investissement Québec shareholding rise, to 25%.

Bombardier says the transaction includes cash proceeds of about $600 million from Airbus, of which $531 million was paid on closing with the balance to be paid over 2020-21. Crucially, it eliminates future capital requirements for the A220 programme, estimated at about $700 million.

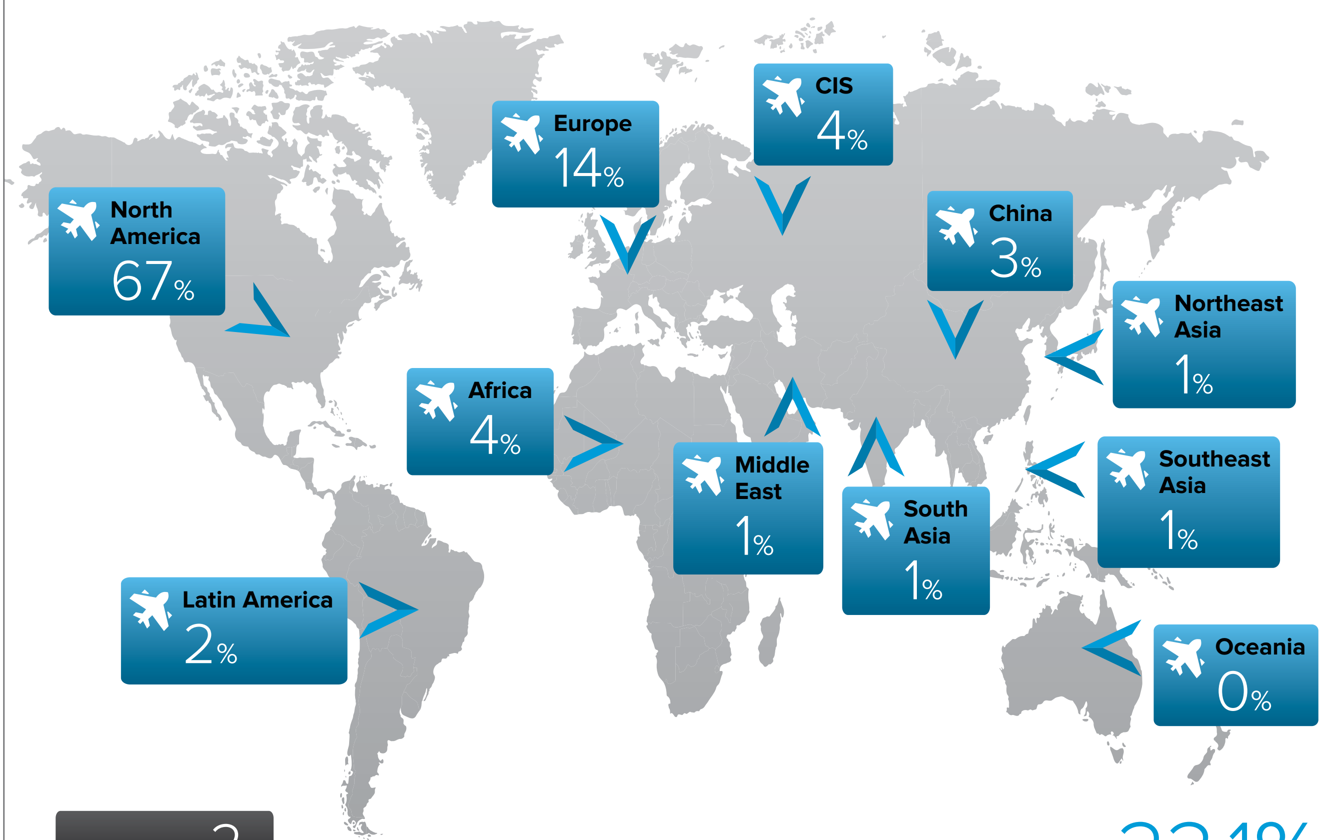
The Canadian manufacturer says the sale of its interest in the ACLP, combined with the previously announced aerospace divestitures, will generate more than $1.6 billion in cash proceeds and eliminate close to $2 billion in liabilities and future commitments.

Bombardier has said the deal "completes its strategic exit from commercial aviation", although that will finally occur once Mitsubishi's CRJ programme acquisition is finalised, which is scheduled for the first half of this year.

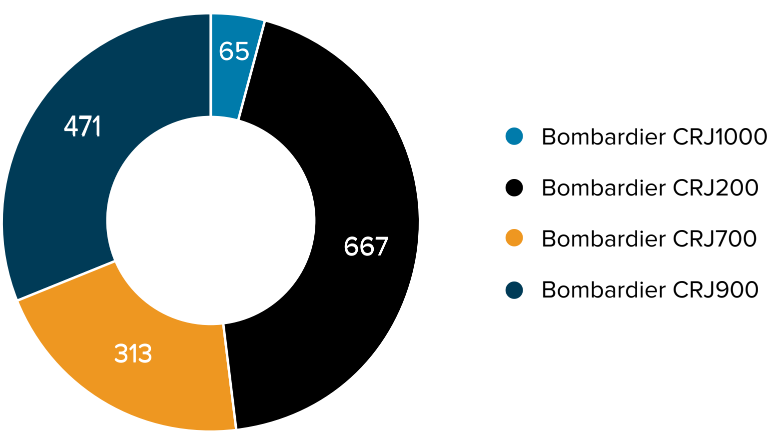
"With our aerospace transformation now behind us, we have a clear path forward and a powerful vision for the future," said Bombardier president and chief executive officer Alain Bellemare last year. "Our focus is on two strong growth pillars: Bombardier Transportation, our global rail business, and Bombardier Aviation, a world-class business jet franchise with market-defining products and an unmatched customer experience."

Bombardier had sold more than 1,950 CRJs and *Airfinance Journal* estimates the backlog at about 20 aircraft.

Bombardier: Region of operation of current fleet



Global regional aircraft market share 23.1%



1,631 Bombardier aircraft in the current fleet

Source: *Airfinance Journal*'s Fleet Tracker

Embraer

Embraer geared up in transitioning its E1 models to E2 models in 2019. The Embraer E190 and E195 backlogs are almost exhausted and the Brazilian manufacturer is focusing on its E2 programme, which included a 16 E190-E2 and 137 E195-E2 orderbook at 31 December 2019.

Embraer was busy in 2019 on two fronts: securing certification of two aircraft models – the E195-E2 in April and E175-E2 in December – as well as its commercial aircraft sales.

In February, Pratt & Whitney delivered the first PW1900G production engines for Embraer's in-development E195-E2, the largest variant of the manufacturer's re-winged and re-engined E-Jet E2 family.

The E195-E2 aircraft has more than 24% reduction in fuel burn per seat than the previous-generation E195, with NOx emissions 50% below the ICAO CAEP/6 regulation and 19dB to 20dB of ICAO Chapter 4 cumulative noise margin, says Embraer.

The E195-E2 certification paved the way for deliveries to customers to start, among which is Aercap, which had an order for 50 units (via its acquisition of ILFC) for forward leases to Air Astana and Azul.

Other lessors exposed to the variant include Aircastle (11 units) and ICBC Aviation (10 units). Both announced a total of 21 placements with KLM Royal Dutch Airlines' subsidiary KLM Cityhopper last year. The Dutch carrier also ordered six aircraft of the type, as it aims to replace KLM's Boeing 737-700 fleet. KLM Cityhopper will start taking deliveries in the first quarter of 2021 and will phase out its E190 fleet by 2022.

Embraer secured new customers for the E195-E2 type in 2019. It sold 13 aircraft to Nigeria's Air Peace, while Binter Canarias added two units to its orderbook.

The manufacturer also recorded a large number of E175 commitments last year, mostly with repeat orders. United Airlines placed orders for 20 units and optioned 19, SkyWest Airlines placed two orders totalling 16 units (and ordered 20 more aircraft earlier this year), while Fuji Dream Airlines added two E175 units to its orderbook.

Embraer secured two new E1 customers in 2019: Egypt's CIAF Leasing for three E190s and Congo Airways for two E175s.

Embraer's E190-E2 aircraft, which is also powered by the Pratt & Whitney PW1900G engine, entered service in April 2018 with Wideroe, followed by Air Astana in December 2018.

In late 2019, the Embraer E175-E2 performed its inaugural flight, kicking off a rigorous 24-month flight test campaign.

The E175-E2 has one additional row of seats compared with the first-generation E175 and can be configured with 80 seats in two classes, or up to 90 in a single class.

Embraer says the model will save up to 16% in fuel and 25% in maintenance costs per seat compared with the E175. Like the E190-E2 and the E195-E2, the E175-E2 will have the longest maintenance intervals in the single-aisle jet category with 10,000 flight hours for basic checks and no calendar limit for typical E-Jet operations. This means an additional 15 days of aircraft utilisation over a period of 10 years compared with current-generation E-Jets.

Embraer delivered 89 commercial aircraft in 2019 of which 67 were for the E175 model.

Its backlog stood at 338 aircraft, of which an estimated 181 were for the E175 model.

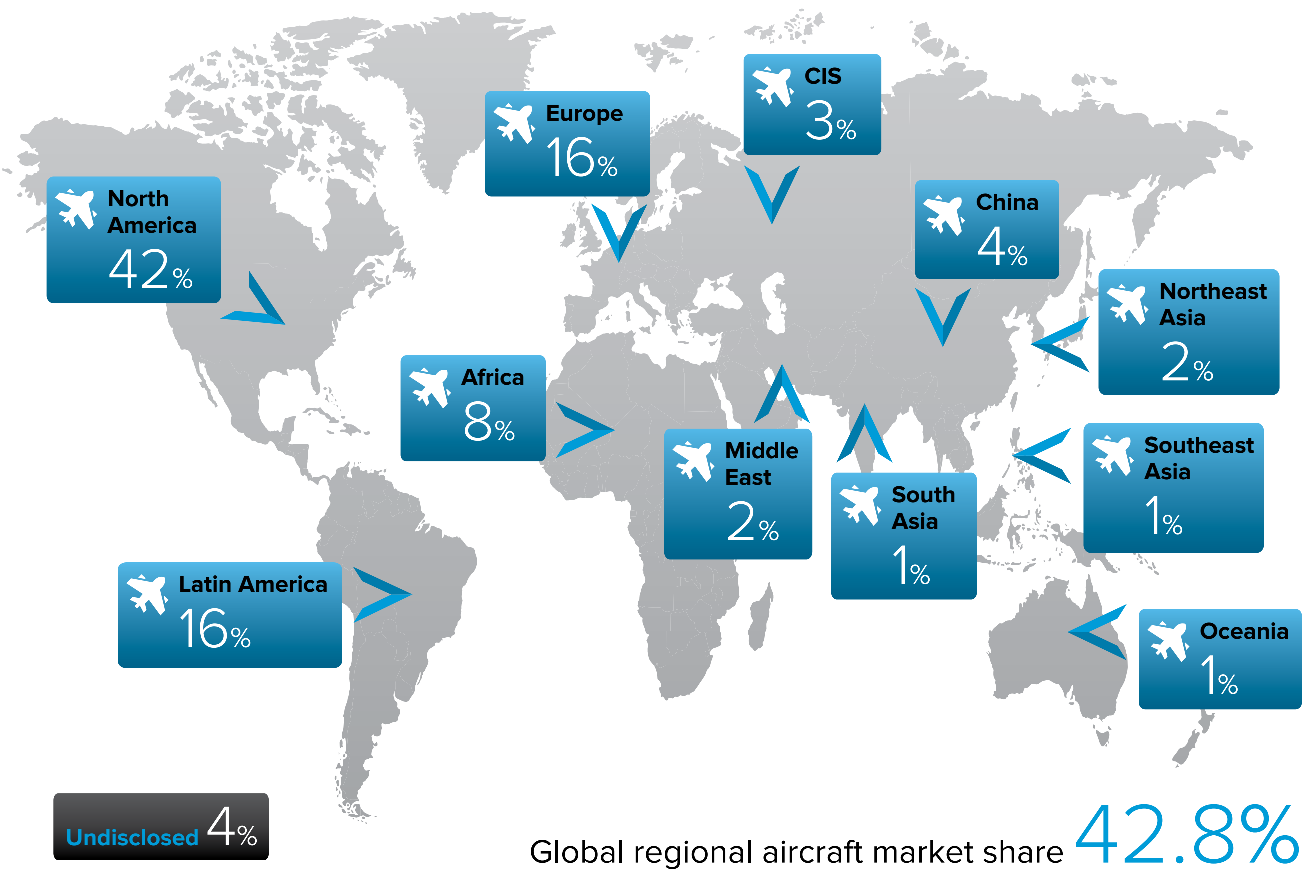
Regional aircraft deliveries are worth $7.2 billion in financing requirements and, despite a 5% drop in the number of aircraft being delivered in 2019 compared with 2018, the overall dollar volume will remain at similar levels, says Embraer.

The manufacturer anticipates financing requirements in the sub-150-seat market to rely more on debt and capital markets in the future.

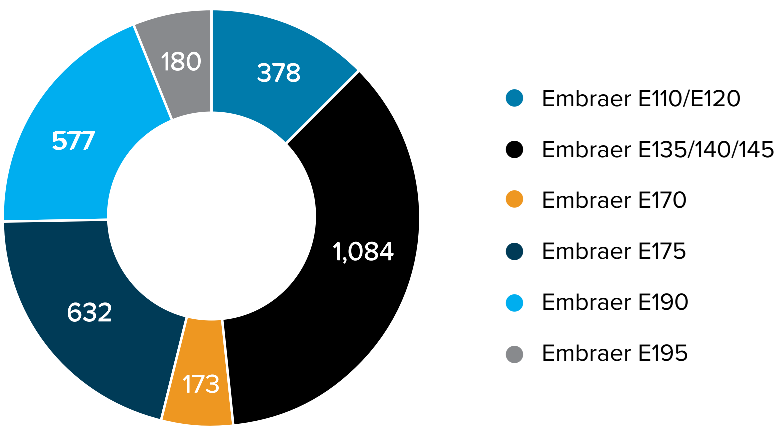
In its newly published aircraft finance outlook, Embraer points out that the segment's reliance on export credit agencies is at historically low levels. Embraer expects the banking markets to cover 38% of this year's deliveries, compared with 28% in 2018. Cash financing, which represented 40% of last year's financings, is set to drop to 31%.

But Embraer expects the regional aircraft market (up to 150 seats) to feature financing backed by a non-payment insurance product this year.

Embraer: Region of operation of current fleet



Global regional aircraft market share 42.8%



3,024 Embraer aircraft in the current fleet

Source: *Airfinance Journal*'s Fleet Tracker

Mitsubishi Aircraft

Mitsubishi Aircraft, which has been involved in the manufacturing of the MRJ family for almost 15 years, rebranded last year its 76-seat MRJ70 as the SpaceJet M100, while the 92-seat MRJ90 will be known as the SpaceJet M90.

Last summer's move came at a time when the Japanese manufacturer is seeking to ensure its place in a consolidating market for regional aircraft that has seen Airbus acquiring a majority interest in the CSeries (now the A220 family) and Boeing in the process of taking over its Brazilian rival Embraer.

Mitsubishi will be hoping that CRJ customers will now look to its SpaceJet products as a modern alternative. The SpaceJet products benefit from the geared turbofan technology while the rebranding is also underlining planned improvements to performance and cabin comfort.

The Japanese manufacturer is also making plans to introduce a larger 100-seat model that will be called the SpaceJet M200.

The SpaceJet M100 is mainly addressed for the US market, where the scope clause terms of pilot union agreements mean that aircraft used for regional airline applications need a maximum take-off weight of no more than 86,000 pounds. Mitsubishi will be using new lighter-weight materials for the new model so it can meet this requirement, while still offering 76 seats in three-class configuration.

Mitsubishi says the model can also be flexibly configured for other global market needs up to 88 single class seats, with industry-leading operating economics throughout the full range of configurations.

"The regional market is an attractive one, full of untapped growth potential," says Alex Bellamy, Mitsubishi Aircraft Corporation's chief development officer.

"Millions of people around the world rely on regional air travel to get to where they need to go. There is no reason that their experience as passengers should not be as good as or better than on a mainline flight. The SpaceJet family provides the missing link in a curb-to-curb experience for the next generation of travellers, while bringing a higher level of value to a neglected and undervalued market segment."

After several delays to a development programme that began almost a decade ago, the larger SpaceJet M90 was expected to enter service with launch customers Japan Airlines and All Nippon Airways before the end of 2020. It has now been postponed to April 2021 at the earliest.

In the meantime, Mitsubishi Aircraft confirms that Hisakazu Mizutani, its current president, will become chairman. Takaoki Niwa will take his place as president, effective from 1 April. Niwa most recently served as president and chief executive officer of Mitsubishi Heavy Industries America.

Bombardier acquisition

In June 2019, Mitsubishi Heavy Industries entered a definitive agreement with Bombardier for the acquisition of its regional jet programme. The agreement is scheduled to complete in the first half of 2020. Mitsubishi Heavy Industries will acquire the maintenance, support, refurbishment, marketing and sales activities for the CRJ Series aircraft, including the related services and support network in different locations as well as the type certificates.

"This transaction represents one of the most important steps in our strategic journey to build a strong, global aviation capability. It augments these efforts by securing a world-class and complementary set of aviation-related functions including maintenance, repair and overhaul, engineering and customer support," says Mitsubishi Heavy Industries' president and chief executive officer, Seiji Izumisawa.

Bombardier's regional jet programme is seen as complementary to the Japanese firm's existing commercial aircraft business – in particular, the development, production, sales and support of the Mitsubishi SpaceJet commercial aircraft family.

The maintenance and engineering capabilities of the CRJ programme will further enhance critical customer support functions, a strategic business area for Mitsubishi Heavy Industries in the pursuit of future growth, states Bombardier.

The challenges lie in integrating the units within the Mitsubishi SpaceJet entity as well as getting certification for the long-awaited aircraft.

Bombardier had sold 1,950 CRJ aircraft and its backlog was down to 19 aircraft as of 31 January 2020.

Airfinance Journal understands that 17 units were still to be delivered to American Airlines and Delta Air Lines, while the remaining two aircraft were to deliver to a corporate entity.

De Havilland Aircraft of Canada

De Havilland Aircraft of Canada has announced order commitments for the Dash8-400 aircraft, reflecting the appetite for the model and probably availability in terms of slots.

UAE-based lessor Palma Holdings signed a letter of intent for the acquisition of 20 Dash8-400 aircraft at the Dubai air show. The manufacturer also signed a conditional purchase agreement with another lessor, Aero Capital, for three Dash8-400s.

These commitments came after other announcements from Aeroflot subsidiary Aurora (five aircraft), Nigerian energy conglomerate Elin (three aircraft), while the Ghanaian government signed a deal to purchase up to six Dash8-400s.

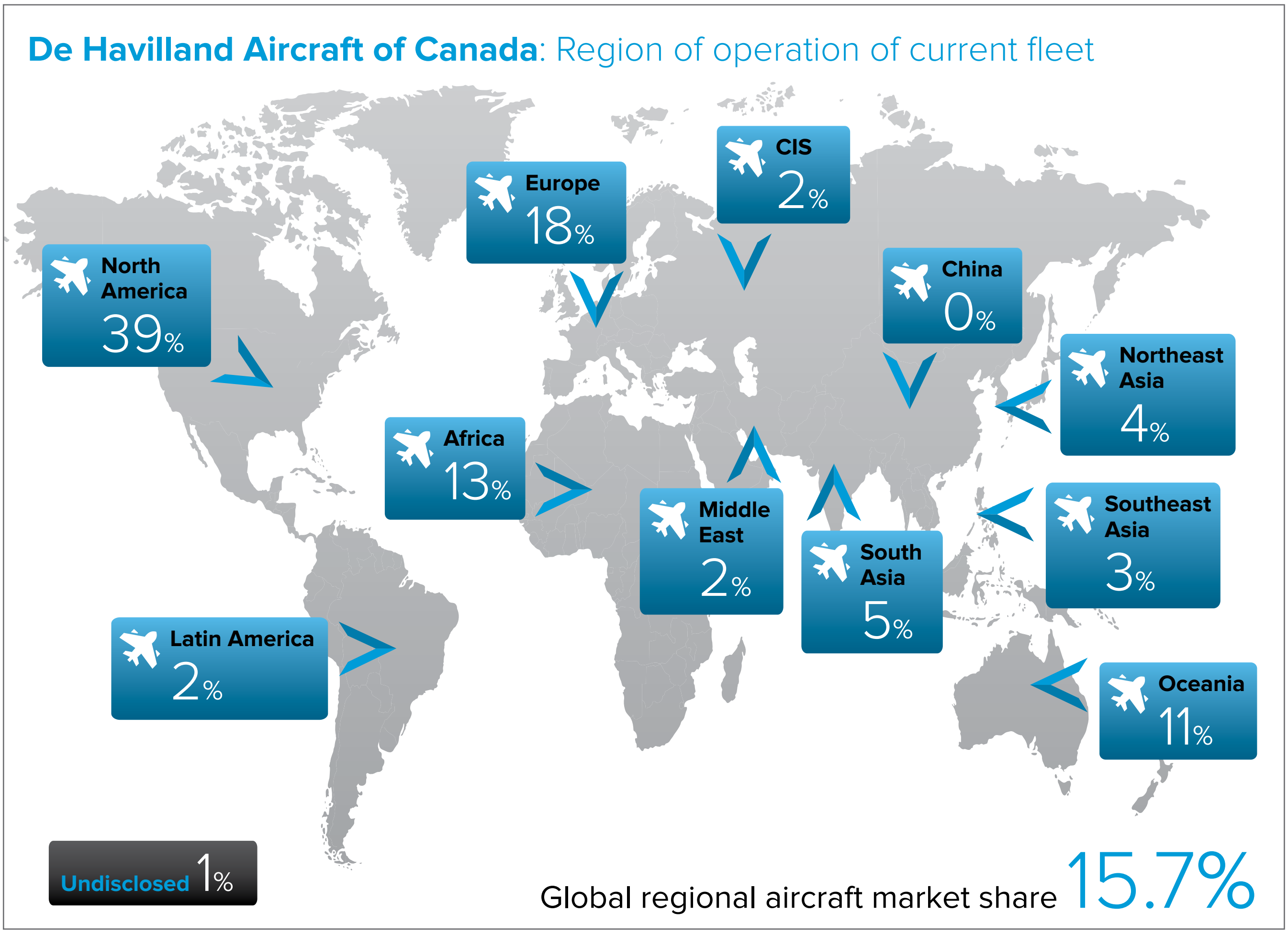
The country has announced plans to launch an Accra-based carrier to serve domestic, regional and international routes.

De Havilland Aircraft of Canada booked its first firm order last October with the United Republic of Tanzania for three Dash8-400s. The 78-seat aircraft will be leased to and operated by Air Tanzania.

The Canadian manufacturer hopes to continue the legacy of the Dash8-400 model, which addresses the 74- to 90-seat market. Last autumn, it delivered the 600th Dash8-400 produced at the company's Toronto facility. The milestone delivery underscores the aircraft's global reputation as a network builder for airlines, on the strength of its short take-off and landing capabilities and efficient regional operations. "At full 90-seat capacity, the Dash8-400 aircraft now fills a niche unmatched in the market, and we also have the ability to deliver aircraft in other configurations according to the needs of the customer. For example, the Dash8-400 could offer a very compelling three-class, 50-seat configuration for regional aircraft operators seeking to serve scope-limited opportunities," says De Havilland chief operations officer Todd Young.

According to Young, the original equipment manufacturer sees especially strong potential for Dash8-400 operations in India.

1,110 De Havilland Aircraft of Canada in the current fleet



Source: Airfinance Journal's Fleet Tracker